AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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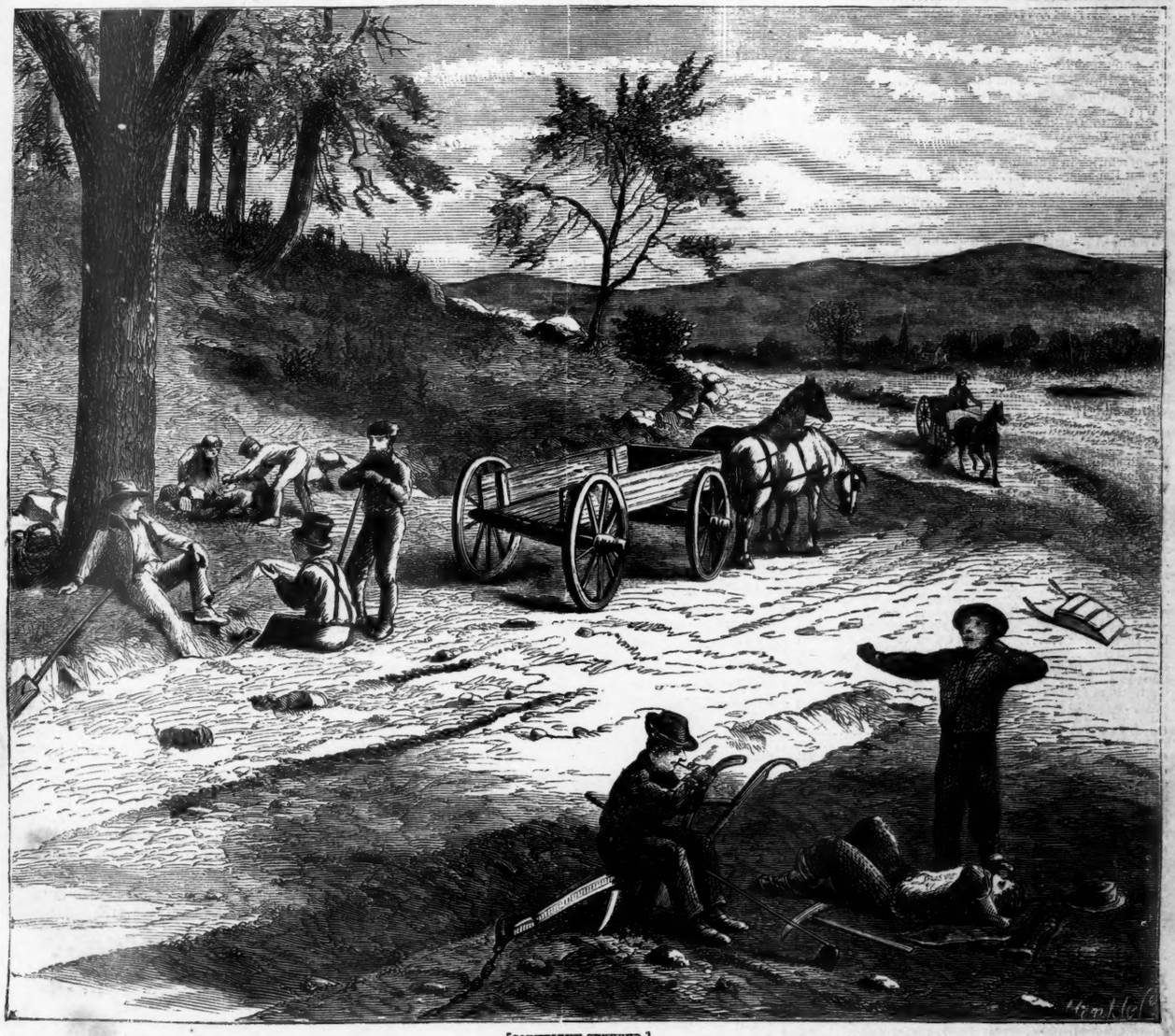

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ROAD MENDING.—*Drawn and Engraved for the American Agriculturist.*

In the above engraving is represented a scene of very common occurrence in the majority of country districts. Working out the road-tax is generally made an occasion for mingling a little work with a good deal of good-natured gossip, some politics, and much discussion as to the propriety of this way or that way of filling up a mud hole or repairing a ditch. If this should be looked upon in a way that would occur to a person of the amiable disposition of Mr. Gradgrind, he might object to such a method of doing business as far from economical, and as a waste of time. But Mr. Gradgrind was no farmer, and never worked out his tax. We have done so, and we know how much a man feels better all over after an hour's shoveling is followed by an equal amount of rest, and moreover it always turns out that the road-work is "done," even though it should need to be done over again in the same way next season. But yet it did sometimes occur to us that this was not quite the way in which work was done at home, and the question "Does this pay?" came up occasionally for consideration. We confess to thinking it did not, and still hold to that opinion, and have little doubt that in country road-making and mending, as well as in almost all other things, "old things are passing away." If there is one thing more than another in which we need to mend our ways it is in regard to our country roads. The better the roads the more valuable the farms alongside of them, and the greater the value of every pound of produce carted over them. This is true without a question. Then it becomes a serious matter to have roads built so that they may be easily passable, and be kept so without needing the annual outlay of several days' work to each farmer in repairing them.

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Calendar for July.

Day of Month.	Day of Week.	Boston, N. England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises.	Sun sets.	Mo'n sets.	N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises.	Sun sets.	Mo'n sets.	Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises.	Sun sets.	Mo'n sets.
		H. M	H. M	H. M.	H. M	H. M	H. M.	H. M	H. M	H. M.
1	T	4 25	7 40	11 46	4 31	7 34	11 46	4 37	7 29	11 45
2	W	4 26	7 40	morn	4 32	7 34	morn	4 37	7 29	morn
3	T	4 27	7 40	0 6	4 33	7 34	0 7	4 38	7 29	0 7
4	F	4 27	7 39	0 27	4 33	7 33	0 28	4 38	7 28	0 30
5	S	4 28	7 39	0 48	4 34	7 33	0 51	4 39	7 28	0 54
6	S	4 29	7 39	1 14	4 35	7 33	1 18	4 40	7 28	1 22
7	M	4 29	7 39	1 48	4 35	7 33	1 53	4 40	7 28	1 58
8	T	4 30	7 38	2 30	4 36	7 32	2 36	4 41	7 27	2 42
9	W	4 31	7 38	rises	4 37	7 32	rises	4 42	7 27	rises
10	T	4 32	7 38	8 34	4 37	7 32	8 28	4 42	7 27	8 22
11	F	4 33	7 37	9 18	4 38	7 31	9 13	4 43	7 26	9 8
12	S	4 33	7 37	9 52	4 39	7 31	9 49	4 44	7 26	9 45
13	S	4 34	7 36	10 22	4 40	7 30	10 20	4 45	7 25	10 17
14	M	4 35	7 36	10 47	4 40	7 30	10 46	4 45	7 25	10 46
15	T	4 36	7 35	11 11	4 41	7 29	11 11	4 46	7 24	11 12
16	W	4 37	7 34	11 33	4 42	7 29	11 38	4 47	7 24	11 40
17	T	4 37	7 34	morn	4 43	7 28	morn	4 48	7 23	morn
18	F	4 38	7 33	0 2	4 44	7 28	0 5	4 49	7 23	0 8
19	S	4 39	7 32	0 33	4 45	7 27	0 37	4 50	7 22	0 42
20	S	4 40	7 32	1 8	4 45	7 26	1 1	4 50	7 21	1 19
21	M	4 41	7 31	1 49	4 46	7 26	1 55	4 51	7 21	2 1
22	T	4 42	7 30	2 36	4 47	7 25	2 42	4 52	7 20	2 49
23	W	4 43	7 29	3 33	4 48	7 24	3 39	4 53	7 19	3 46
24	T	4 44	7 28	sets	4 49	7 23	sets	4 53	7 18	sets
25	F	4 44	7 27	8 40	4 50	7 22	8 35	4 54	7 17	8 31
26	S	4 46	7 26	9 6	4 51	7 21	9 3	4 55	7 17	9 0
27	S	4 47	7 25	9 30	4 52	7 20	9 28	4 56	7 16	9 25
28	M	4 48	7 24	9 50	4 53	7 19	9 49	4 56	7 15	9 48
29	T	4 49	7 23	10 9	4 53	7 18	10 9	4 57	7 14	10 9
30	W	4 50	7 22	10 29	4 54	7 18	10 30	4 58	7 14	10 32
31	T	4 51	7 21	10 59	4 55	7 17	10 53	4 59	7 13	10 55

PHASES OF THE MOON.

MOON.	D.	BOSTON. H. M.	N. YORK. H. M.	WASH'N. H. M.	CHA'STON H. M.	CHICAGO. H. M.
1st Quart	2	6 26 ev.	6 14 ev.	6 2 ev.	5 50 ev.	5 20 ev.
Full M'n	10	1 50 m.	1 38 m.	1 26 m.	1 14 m.	0 44 m.
3d Quart.	16	4 14 ev.	4 2 ev.	3 50 ev.	3 38 ev.	3 8 ev.
New M'n	24	5 50 m.	5 38 m.	5 26 m.	5 14 m.	4 44 m.

AMERICAN AGRICULTURIST.

NEW YORK, JULY, 1873.

The great truth which the *American Agriculturist* aims to teach and enforce is the necessity for better farming. Every year the partial failure of some of our crops illustrates the importance of the lesson. These failures rob us of half our profits. Some years we have poor corn, and some years poor potatoes or poor hay. This year, in our own neighborhood, we have poor winter wheat. It is time we looked this matter squarely in the face. The seasons do not change. What has been will be. We have always had floods and drouth, cold winters and hot summers. It is the part of wisdom to expect them and prepare for them.

Right before our eyes where we now write is a twenty-acre field of wheat, half of which will produce over 30 bushels per acre, and the other half not three bushels. The poor crop is attributed to the bad season. The good crop is due to richer land and better culture. It will not do to say that the season has nothing to do with the failure on one-half of the field; but it is certain that good farming will to a considerable extent enable us to get profitable crops even in the worst seasons. This is a lesson we are exceedingly slow to learn. We *must* farm better. We do not advocate any great radical changes in our system of farming. We propose no extravagant expenditures. We recommend nothing that farmers can not carry out. We simply urge them to spare no efforts to clean and enrich their land. We want them to fully realize the absolute necessity there is for a better system of farming.

Hints about Work.

Haying and Harvesting are supposed to be the most important work of the month. In one sense this is, of course, true. But any one who keeps a record of the daily and hourly work done on the farm will be astonished to find how small a proportion of his time is spent in the actual operations of cutting and gathering the crops.

Thirteen Hours a Day spent in actual work gives us 338 hours in the month. An average farm employs perhaps five persons. This gives 1690 working hours during the month.

How are these Hours Spent?—Will our readers take a pencil and figure up? We think it will be found that not one-half of these working hours are spent in doing what we call important work. And if this is so, the really important work of the farm must be looked for outside of the regular operations that we think and talk about.

Look for the Weak Spot.—The success of a farmer depends very much on his ability to discover where time is lost, and on his skill and promptness in rectifying the trouble. The weak spot differs on different farms, but it always exists. See if you can find it.

Machinery is a great help, provided a farmer knows how to use it. He must keep it in thorough repair and in working order. As a rule, a farmer will generally do better to hire as much of his work done by machinery as possible, rather than to keep the machines himself.

Haying on a large grain farm should be pushed forward as rapidly as possible, so as to be out of the way before the grain is ready to cut.

Better Cut Grass too Early than too Late; and we have found from experience that it is not well to be too timid in regard to the weather.

Get the Hay in as Fast as you can Cure it.—If you do this, you need not hesitate to cut down the grass for fear of bad weather. On the other hand, however, be careful not to cut down more hay than you have force enough to handle.

In Making Hay, the essential points are to get rid of the moisture in the grass as rapidly as possible. We should aim to expose it as much as possible to the sun and air; but the shorter the time it is exposed the better, provided it is sufficiently cured to keep without molding. Above all, aim to avoid exposing cured or partially cured hay to dew and rain.

Green Grass, freshly cut, can be exposed to rain or dews with little or no damage. For this reason we like to cut in the afternoon or evening, and let the grass lie undisturbed until the dew is off the next morning. Then use the tedder, and try to get the hay ready to draw in during the afternoon. Any hay that can not be drawn in should be made into cocks before the dew falls. Where there is force enough, the most economical way to draw in hay is with three wagons. The pitcher remains in the field all the time. One wagon is going back and forth all the time, one is at the barn, and one in the field. A good pitcher should send home a fair two-horse load every 25 minutes.

Make Good Loads, but not high ones. All loaders have a tendency to draw in their loads at each end. This involves an unnecessary expenditure of power on the part of the pitcher.

A Boy to Drive the Wagon from Cock to Cock will save much time. A good pitcher will give a loader all he wants to do without his having to look after the team. Where the loader drives, half the time is often spent in getting from cock to cock. If you doubt it, test it by the watch.

A Little Salt, say a quart to a ton, may be scattered on the hay as it is put in the barn or stack with advantage. It is a mistake to suppose that salt draws moisture from the atmosphere. It draws it out of the hay.

Wheat should be Cut as soon as the grain ceases to have any "milk" in it, but not before. With us, straw is so valuable that we cut as close to the ground as possible. An inch of straw at the ground weighs as much as two inches at the top.

Binding is now the costly work of harvesting wheat. We have known a farmer pay $4 per day to men to bind a light crop of wheat that was so full of thistles that they could not do more than half a good day's work. We would have made "rakings" of the whole crop; or rather we would have left it in the gavils as thrown off by the reaper and pitched it with a barley-fork. Anything is better than submitting to the extortionate de-

mands of itinerant vagabonds who are too lazy to take fair wages for steady work.

Barley, if a good crop, is best harvested by cutting with a reaper and binding it into sheaves like wheat. But if there is not time for this, cut it with the reaper in the afternoon or evening. Let it lie in the swath or gavel all night, and the next morning as soon as the dew is off turn it. Turn it again before dinner; and if the weather is favorable, and the crop free from weeds, it will be ready to draw in in the afternoon. If not, put it into cock and draw in the next day.

Oats require much longer time to cure; otherwise they can be harvested in the same way. Have them well cured before putting in the barn.

Indian-Corn.—It will not do to neglect this important crop during haying and harvesting. Whenever a man can be spared, let him take a horse and cultivate corn. Farmers are improving in this respect, but even yet we rarely cultivate our corn half enough. We often cultivate our own corn as late as the first of August. "It is the last blow that kills the cat," and it is the last hoeing or cultivating that kills the weeds and insures clean land. Let the cultivator run shallow so as not to cut the roots. Put a muzzle on the horse to prevent his eating. He will go much more steadily, and the work will be better done. Go over the field with a hoe, and cut out or pull out any weeds that the cultivator can not reach.

Potatoes should be cultivated as long as the teeth do not disturb the runners. Afterwards, keep the land clean with the hoe, or by pulling out the large weeds by hand. You *must* get rid of the weeds or give up the hope of raising a good crop.

Swede Turnips or Ruta-bagas should be sown without delay. Drill in from one to two pounds of seed in rows 2 to 2½ feet apart. Thin out to ten or twelve inches in the rows.

Common White Turnips can be sown any time during the month.

Mangel-Wurzel or Beets should now be ready for the second hoeing. Use the cultivator freely between the rows, and do not suffer a weed to grow.

Summer-Fallows should be plowed the second time this month; or, at any rate, kept entirely free from weeds by the use of the cultivator.

Plaster may be sown on clover as soon as the first crop is gathered—say one to two bushels per acre.

Manure may be drawn out and spread on meadows or grass land, and harrowed with a smoothing harrow. Or it may be drawn out and spread on the fallows for wheat.

Corn for Fodder, if sown in drills, should be repeatedly cultivated. If sown broadcast, we have no hints to give. You do not deserve a good crop, and probably will not get it.

Horses, if not worked hard, will be better at pasture than in the stable. A good clover pasture is best for them. If the horses are thin, and you wish to get them in better condition, let them have in addition to the pasture *all they will eat* of a mixture of cut hay and oat or corn meal, in the proportion of a bushel of chaff to 4 quarts of meal.

Milch-Cows on our own farm are allowed the mixture alluded to above. When the pastures are good, they will not eat much of this cut feed, and we mix less chaff with the meal. We want each cow to get a quart of corn-meal twice a day, but want her to eat something with it.

Sheep require comparatively little attention this month. See that they do not suffer for want of water. Do not let the butcher tempt you to part with your best ewe lambs. If not already done, dip the lambs in a solution of carbolic soap to kill the ticks. Do not neglect this another day.

Swine should have access to all the fresh water they can drink. If kept in a pen, there should be two troughs, one for food and one for water, and the latter should always be kept full of clean water. Give charcoal or ashes, sulphur, and salt. Keep pens and troughs clean, and wash them out at least once a week with crude carbolic acid and water. If the pigs themselves could be washed, it would be good for them. Pigs running in the pasture, if intended to be fattened this fall, should have a liberal allowance of corn in addition to the pasture. Breeding sows will keep in good healthy condition on clover alone. Young pigs should always have all they can eat. Feed regularly, and keep clean. Now is a good time to secure a young boar of some well-established breed.

Work in the Horticultural Departments.

The warm weather will give weeds as well as plants a new impetus, and only active measures will keep the weeds from surpassing the plants in growth. The hot sun will readily kill the weeds if the ground is hoed often. Where the crops are planted at a proper distance, a horse-cultivator proves the best implement for stirring the soil; but, at any rate, the soil must be kept light and open. In seasons of drouth, crops flourish better if the ground is constantly loosened, as the heavy dews have an opportunity to reach the roots, and thus keep the plants from suffering, as they would if the surface was baked by the sun.

Orchard and Nursery.

Marketing of early fruits will be the principal work in this department, and the grower should make it an invariable rule to offer only good, marketable fruit for sale. If necessary, make two qualities, and the increased returns will pay for the extra trouble in sorting.

Peaches.—Pick when they are just firm enough to bear transportation, so that by the time they reach the markets they will be in good eating condition.

Thinning may now be attended to, though rather late. The poorer specimens of apples and pears should be removed, so that only good fruit may ripen. Pear trees will sometimes need going over twice, as one seldom has the courage to remove a sufficient quantity the first time.

Budding is to be done as soon as the bark of the stock will separate readily from the wood, and when good buds of the present season's growth can be had. To hasten the maturity of buds, pinch the ends of the shoots.

Insects will continue to make their appearance. Even if great care has been taken to destroy those met with earlier in the season, a Tent-caterpillar's nest will now and then be found. Red Spider often makes its appearance on fruit trees, as well as on ornamental ones, its presence being indicated by the brown tinge upon the leaves. To destroy it, syringe with carbolic soap-suds or whale-oil soap.

Cordon Trees trained upon trellises and wires will need frequent pinching to regulate their shape and insure an even and regular growth.

Young Trees planted in nursery rows will need attention now to prevent their being overrun with weeds. If planted at sufficient distance apart, a horse and cultivator can be used to advantage. Beds of seedling trees must be hand-weeded.

Fruit Garden.

Strawberries.—Keep the runners cut upon beds which are to remain permanently. After the fruit is off, give the beds a dressing of fine manure, ashes, or guano, working it in between the rows. When weeds make their appearance in mulched beds pull them up. Plants struck in pots may be set out at any time after they are well rooted.

Blackberries and Raspberries should not be allowed to grow higher than five feet; when the new canes reach this height pinch off the growing end. The lateral branches must be pinched back in the same way when they are 18 inches long. Do not allow suckers to grow unless plants are needed for filling vacancies.

Marketing.—Extended articles upon marketing the various small fruits were given in June and in the present number, and are worth looking to carefully, as upon the condition in which the various fruits arrive in the market is dependent the profit or loss upon them.

Grapes.—As soon as mildew makes its appearance, sulphur should be applied; it will appear in gray patches upon the stems and leaves, and if attended to at once it can be prevented from extending farther. Keep down weeds between the rows, and the soil light, so that whenever showers happen the rain can easily penetrate to the roots. Pinching the laterals and rubbing out superfluous shoots must be attended to. The labor is slight, the thumb and finger only being needed.

Kitchen Garden.

Asparagus.—Keep the weeds down by applying a good mulch of coarse manure. Let the tops grow until fall, when they may be cut and burned.

Beans.—Late plantings may be made for salting or pickling. See that the pole-beans are not allowed to straggle away from the poles, as this will prevent their being cultivated with a horse cultivator.

Carrots.—Thin and weed the late sowings, and keep the ground between the rows loose by the use of the hoe until the tops cover the ground.

Celery.—Set out plants for winter use, and keep the ground light and free from weeds.

Corn.—Select the earliest and best-shaped ears for seed next year. If the plants are too thick in the drills, thin at once and dry for fodder.

Cucumbers.—The insects will need looking after constantly, and if any plants die without apparent cause, the probability is that there is a borer at the root: dig out and destroy. Those planted late for pickles will need dusting with lime or plaster when the vines are wet, to hinder the Striped-bug Beetle.

Egg-Plants will stand a great deal of forcing, and a watering of liquid manure once a week will hasten their growth. Kill the "Tomato-worm," which often attacks these plants.

Leeks.—Cultivate the ground between the rows, and thin out the plants if too thick.

Melons.—Cultivate the soil until the vines cover the ground. Remove all fruit that will not ripen. Save seed only from those plants grown at a distance from other varieties.

Onions.—When the majority of the tops fall over they are ready for harvesting. They should be first thoroughly dried, and afterwards stored in a cool, dry place where the air is allowed to circulate.

Spinach.—Sow seed for fall crop in good rich land. The crop to winter over is sown later.

Squashes.—Treat the same as recommended for cucumbers and melons. When the vines root at the joints allow them to remain.

Sweet-Potatoes.—Cultivate and keep clear of weeds until the vines cover the ground. Move the vines occasionally to prevent their rooting at the joints.

Tomatoes.—A great deal may be done to improve this excellent fruit if attention is paid to select for seed only those specimens which are of good shape, with solid flesh. Some mode of training should be resorted to to secure the best fruit, and to do this will require care in pinching the shoots and cutting out useless branches.

Turnips.—Dust the young plants with lime or ashes to keep off the insects.

Flower-Garden and Lawn.

Lawns.—The intense heat of the summer is likely to dry up the grass of those which were made in the spring, unless it is watered occasionally during drouths. Annual grasses will also most likely make their appearance; these will leave a bare brown spot in the fall. The ground should be rolled and frequently mowed to encourage the formation of a close turf.

Bedding Plants set out last month will need a good deal of care to keep the weeds down and the soil loose so that they may grow rapidly. It will be necessary to use the knife to give good shape.

Gladioluses.—Tie up to stakes, so that the flower-spikes will not be broken by high winds.

Roses, whether pegged down or trained as standards, will need attending to. Cut back the ever-blooming sorts, as soon as they have flowered, to a strong bud, and they will soon flower again.

Chrysanthemums will need pinching into shape. Do not allow the branches to become crowded, as the lower leaves will be likely to decay.

Dahlias.—As soon as large enough to need it, tie up to stakes. Give occasional waterings of liquid manure to keep them in good growing condition.

Lilies.—Stake the weaker sorts, and cut off the flowers as soon as faded.

Edgings will require cutting to keep the grass-roots from extending to the beds and walks; to do this neatly, an edging-knife is the best instrument.

Perennials.—As soon as the seeds are ripe gather all which are needed for propagation; if sown at once they will germinate very readily.

Potted Plants, which have not been plunged, will need attention to prevent their drying out.

Greenhouse and Window-Plants.

But few directions are needed for this department this month, as those given last month are applicable to this. The principal work is to keep the plants free from insects and in a healthy condition. Climbers on the rafters will need training, so as to afford plenty of shade during the summer heat. There will also be the work of gathering together seeds and soil for potting use during the winter. Summer is also the best time for making any necessary repairs upon the boilers or pipes, or for putting up new glass and repairing the old. If the plants are not sufficiently protected from the sun by the climbers it will be necessary to coat the glass with whitewash. Frequent showering of the walks will keep the atmosphere from becoming too dry.

Commercial Matters—Market Prices.

Gold has been as low as 117¼, and as high as 118⅝—closing June 12th at 117¼, as against 118¼ on May 12th.

.....Under very liberal arrivals of produce, especially of Breadstuffs, the markets have been generally depressed and lower..... Flour, Wheat, Corn, Oats, and Rye have been offered much more freely at materially reduced prices, leading an active business, in good part for forward delivery, and in Flour, Wheat, Corn, and Rye, largely for export, closing heavily. The bulk of the receipts of Corn, through the canal thus far, graded no better than steamer stock. Winter Wheat has been unusually dull and irregular.....Provisions have been in fair request, but at variable figures. Butter and Cheese closed weak, the latter particularly so, under ampler offerings. Eggs advanced sharply on lighter arrivals..... Cotton closed stronger, with a livelier inquiry noted. .....Hay, Hops, Hemp, Seeds, and Tobacco have been in moderate demand on the basis of our revised quotations.....A Butter and Cheese Exchange has been formally organized since our last, to represent these very important producing and trade interests.....In Wool, the transactions have been comparatively moderate, the demand having been mainly for manufacturing purposes and to provide for immediate wants. Domestic product has been offered reservedly, the supply of old stock having been limited, and the arrivals of new thus far comparatively light, with prices quoted weak. The principal business in domestic has been in Fleece and washed carpet qualities. In Pulled there has not been much movement. Of California Spring Clip the receipts are increasing, leading to some show of animation. Foreign varieties have met with a rather slow sale, despite the free offerings and the accommodating disposition of holders.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, from our daily record during the year, show at a glance the transactions for the month ending June 13th, 1873, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
26 d's *this* m'th.	313,000	2,627,000	2,712,000	103,500	75,000	838,000
25 d's *last* m'th.	312,000	619,000	496,000	500	101,000	635,000

SALES.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
26 d's *this* m'th.	305,000	2,912,000	2,726,000	166,000	85,000	1,637,000
25 d's *last* m'th.	286,000	1,678,000	2,274,000	71,000	147,000	1,512,000

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
26 days 1873.	313,000	2,627,000	2,712,000	103,500	75,000	838,000
26 days 1872.	295,000	1,119,000	5,172,000	184,500	328,000	1,397,000

SALES.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
26 days 1873.	305,000	2,912,000	2,726,000	166,000	85,000	1,637,000
26 days 1872.	194,000	1,401,000	5,119,000	166,500	155,000	1,443,000

Stock of grain in store at New York.

	Wheat. bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Malt.* bush.
June 9, 1873.	126,531	531,891	4,273	13,197	162,054	197,671
May 5, 1873.	218,223	585,233	27,360	46,764	276,666	181,496
Apr. 7, 1873.	488,904	866,207	55,819	83,680	666,598	178,232
Mar. 10, 1873.	671,197	2,515,892	37,302	293,493	846,596	166,302
Feb. 10, 1873.	805,561	3,189,195	30,580	468,934	959,134	173,100
Jan. 13, 1873.	1,177,359	4,743,961	44,039	571,051	1,367,187	175,805
Dec. 9, 1872.	1,335,975	5,675,730	51,665	624,854	1,608,865	215,326
May 8, 1872.	1,015,533	197,393	271,565	18,032	1,115,022	80,447
April 8, 1872.	1,591,946	424,856	353,430	190,691	78,387	——

4. *Exports from New York, Jan. 1 to June 12:*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Peas.* bush.
1873.	526,562	3,241,919	5,394,449	20,823	16,536	13,616	38,200
1872.	363,240	3,242,961	6,066,709	283,624	22,638	15,178	——
1871.	874,090	6,153,722	3,200,036	34,919	78,818	14,889	——
1870.	727,097	5,435,282	130,519	36,595	——	9,378	——
1869.	420,294	3,802,589	1,328,869	——	——	40,401	——
1868.	403,556	2,580,805	3,559,097	153,093	——	39,008	——

5. *Receipts at head of tide-water at Albany each season to June 8th.*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
1873.	26,000	1,134,800	1,672,900	114,400	13,000	346,900
1872.	22,400	960,800	1,988,500	135,700	337,000	787,200
1871.	48,500	2,511,500	2,093,800	38,200	29,700	593,500
1870.	33,100	1,900,600	127,700	41,200	73,900	382,500
1869.	28,500	1,531,000	718,000	121,400	11,800	519,600
1868.	65,700	3,684,900	3,297,400	149,200	326,300	1,864,800
1867.	17,100	21,700	592,100	28,000	28,200	276,500
1866.	34,200	317,200	2,090,700	64,300	41,700	898,700
1865.	94,100	547,900	731,800	51,000	114,300	1,944,800

CURRENT WHOLESALE PRICES

	May 13.	June 13.
PRICE OF GOLD	118¼	117¼
FLOUR—Super to Extra State	$5 65 @ 8 25	$5 50 @ 8 00
Super to Extra Southern	6 00 @12 50	5 50 @11 25
Extra Western	6 65 @12 50	6 30 @11 00
Extra Genesee	8 25 @10 50	8 10 @10 50
Superfine Western	5 65 @ 6 25	5 30 @ 6 00
RYE FLOUR	4 10 @ 6 00	4 10 @ 5 90
CORN-MEAL	3 15 @ 3 75	3 15 @ 3 65
WHEAT—All kinds of White	1 85 @ 2 30	1 70 @ 2 00
All kinds of Red and Amber	1 80 @ 2 05	1 20 @ 1 85
CORN—Yellow	68½@ 69¼	63 @ 65
Mixed	67 @ 68¾	50 @ 66¼
OATS—Western	50 @ 56½	42½@ 51½
State	51 @ 56½	45 @ 53
RYE	95 @ 1 00	90 @ 95
BARLEY	70 @ 1 18	Nominal.
HAY—Bale, ₱ 100 lbs	75 @ 1 50	70 @ 1 40
STRAW, ₱ 100 lbs	55 @ 1 10	50 @ 1 10
COTTON—Middlings, ₱ lb	19¼@ 20	19⅜@ 20⅝
HOPS—Crop of 1872, ₱ lb	35 @ 50	35 @ 50
FEATHERS—Live Geese, ₱ lb	65 @ 82½	65 @ 85
SEED—Clover, ₱ lb	8¼@ 9	8¼@ 9
Timothy, ₱ bushel	4 50 @ 4 60	4 25 @ 4 40
Flax, ₱ bushel	2 25 @ 2 40	2 25 @ 2 40
SUGAR—Refi'g & Grocery ₱ lb	7¼@ 9¾	7¼@ 9¾
MOLASSES, Cuba, ₱ gal	22 @ 45	18 @ 42
New Orleans, ₱ gal	55 @ 80	55 @ 80
COFFEE—Rio (Gold)	17½@ 19¾	18¼@ 19½
TOBACCO, Kentucky, &c., ₱ lb	7 @ 15	7 @ 15
Seed Leaf, ₱ lb	9 @ 75	9 @ 75
WOOL—Domestic Fleece, ₱ lb	52 @ 55	45 @ 57
Domestic, pulled, ₱ lb	28 @ 48	32 @ 48
California, clip	18 @ 38	16 @ 35
TALLOW, ₱ lb	8¼@ 9	8¼@ 8¾
OIL-CAKE—₱ ton	37 50 @41 00	36 50 @39 50
PORK—Mess, ₱ barrel	17 00 @17 75	16 62½@16 75
Prime, ₱ barrel	Nominal.	14 @— —
BEEF—Plain mess	9 00 @11 00	9 00 @11 00
LARD, in tres. & barrels, ₱ lb	8¼@ 9¼	8¼@ 9
BUTTER—State, new ₱ lb	30 @ 45	20 @ 32
Western, ₱ lb	25 @ 32½	15 @ 23
CHEESE	6 @ 16½	7 @ 14¼
BEANS—₱ bushel	1 50 @ 3 00	1 75 @ 2 90
PEAS—Canada, free, ₱ bu	1 35 @ 1 45	1 15 @ 1 35
EGGS—Fresh, ₱ dozen	14½@ 16½	19 @ 22
POULTRY—Fowls	14 @ 21	8 @ 18
Turkeys—₱ lb	13 @ 18	14 @ 18
Geese, ₱ pair	1 25 @ 2 50	— @ —
Ducks, ₱ pair	75 @ 1 25	75 @ 1 50
TURNIPS—₱ barrel	1 25 @ 2 50	3 50 @ 4 00
" per bunch	1 @ 3	— @ —
CABBAGES—₱ 100	8 00 @20 00	2 00 @12 50
ONIONS—₱ bbl	4 00 @ 7 00	4 50 @ 5 00
BROOM-CORN—₱ lb	3 @ 7½	3 @ 7
APPLES—₱ barrel	1 20 @ 3 50	1 00 @ 3 75
POTATOES—₱ bbl	1 50 @ 3 50	1 50 @ 3 25
SWEET POTATOES—₱ bbl	3 75 @ 4 25	4 00 @— —
CARROTS—₱ bbl	3 50 @ 4 00	3 50 @ 4 00
CELERY—₱ doz	— @ —	— @ —
CRANBERRIES—₱ bbl	4 00 @ 6 00	2 50 @ 4 00
KALE, ₱ bbl	— @ —	75 @ 1 00
CHERRIES, ₱ quart	— @ —	6 @ 15
GOOSEBERRIES, ₱ quart	— @ —	15 @ 20
STRAWBERRIES—₱ quart	62 @ 75	5 @ 18
POTATOES, new, ₱ bbl	9 @ 9 50	4 00 @ 8 50
TOMATOES, ₱ crate	1 00 @ 1 25	50 @ 75
GREEN PEAS, ₱ crate	2 00 @ 3 00	2 00 @ 2 50
" " per bbl	— @ —	3 50 @ 5 00
RHUBARB—₱ doz	1 00 @ 1 50	2 00 @ 3 00
RADISHES—₱ 100	1 50 @ 3 00	1 00 @ 2 00
SPINACH—₱ bbl	1 75 @ 2 50	75 @ 2 00
CUCUMBERS—₱ crate	— @ —	1 50 @ 3 00
LETTUCE, ₱ 100	— @ —	3 00 @ 4 00
ASPARAGUS, ₱ doz. bunches	— @ —	1 30 @ 1 50
STRING BEANS, ₱ crate	— @ —	1 50 @ 2 00

New York Live-Stock Markets.

WEEK ENDING	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*	*Tot'l.*
May 19th	9,370	81	3,593	17,681	36,521	67,246
May 26th	8,058	78	4,434	17,193	36,051	65,811
June 2d	9,204	79	4,433	18,266	28,822	60,804
June 6th	8,944	74	4,645	20,491	32,975	68,129
Total for 4 Weeks	35,576	312	17,105	73,637	135,369	261,999
do. *for prev. 5 Weeks.*	44,654	470	15,492	81,310	211,202	354,927

	Beeves.	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
Average per Week	8,894	78	4,276	18,409	33,842
do. do. *last Month*	8,931	94	3,093	16,262	42,240
do. do. *prev's Month*	7,177	154	1,192	15,115	35,918

There was a large supply the first and third weeks, and a fair supply the second and fourth weeks of the month. The quality was better than during the previous month, but prices were ½c. ₱ lb. lower. The demand was fair, but the sales have averaged slow. The Texans have been less in quantity, and better in quality generally speaking, averaging a shade stronger prices.

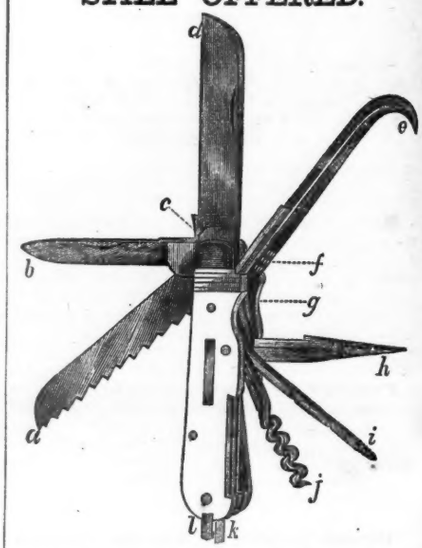
The prices of the past 4 weeks were:

	Range.	*Large Sales.*	*Aver.*
May 19	9¼@13¼c.	11¼@12¼c.	11¾c.
May 26	10 @14 c.	11¼@11¾c.	11¾c.
June 2	9¼@14 c.	11¼@11¾c.	11¾c.
June 9	9¼@13½c.	11¼@11¾c.	11¾c.

Milch Cows.—There has been a moderate demand, with light supply, during the month. The quality ordinary to fair; sales slow. Prices ruling $25 @ $35 for ordinary; $40 @ $65 for fair to good $70 @ $80 for choice; and a few prime sold at $85 @ $90.....

Calves.—Both the supply and demand for veal calves have been larger than the previous months, with prices averaging about the same. Dressed calves have sold fairly at a little advance in price. Quotations for live, 7c. @ 10c. ₱ lb; dressed, 5c. @ 10c. for poor to good, and 10c. @ 13c. good to choice..... **Sheep.**—The markets have been irregular, varying from brisk to dull. The supply has been larger, and the market closes with prices a little easier, very few wooled sheep arriving. Quotations for clipped, 6c. @ 7c..... **Swine.**—The demand for live hogs has been light. There is no activity in the markets. Nearly all the hogs arriving are shipped to slaughterers direct. Prices have been uniformly weaker, closing at 6¼c. @ 7c. for dressed, and nominally 5c. @ 5¼c. for live.

SPECIAL PREMIUMS
STILL OFFERED.



MULTUM IN PARVO KNIFE, OPEN—WEIGHT 2 OZ.

The General Premium List closed July 1st. The following Special Premiums are continued until further notice:

The Multum in Parvo Knife for 8 subscribers to *American Agriculturist* at $1.50 each a year; *or* 5 subscribers to *Hearth and Home* at $3.00 each a year; *or* 6 subscribers for one year to both the above papers at $4.00 each a year. (Knife sent post-paid.)

The Beckwith Improved $12 Sewing Machine for 16 subscribers to *American Agriculturist* at $1.50 each a year; *or* 8 subscribers to *Hearth and Home* at $3.00 each a year; *or* for 9 subscribers to both papers at $4.00 each a year.

To secure the Chromos, mounted and prepaid, 25 cents must be remitted with each subscription for *American Agriculturist*, and 50 cents with each for *Hearth and Home*.

N. B.—Two half-year subscribers in all the above cases may count for one full year in a Premium Club List, but no Chromos are given to half-yearly subscribers.

MULTUM IN PARVO KNIFE, CLOSED—3 inches long.

Please tell your Friends

THAT FOR ONLY 75 CENTS

They can secure the AMERICAN AGRICULTURIST for Six Months.

We invite all parties not acquainted with our valuable paper to try it for six months, from July to December. Subscriptions will be received for that time at seventy-five cents each. Almost daily we hear the remark that some item in the *American Agriculturist* is worth far more than a year's subscription ($1.50.) Please understand, we will send it for six months beginning July '73, for 75c. Of course this does not include the beautiful chromo "Mischief Brewing," which is offered to all *yearly* subscribers free when taken at 245 Broadway, twenty-five cents extra when sent prepaid. Try it six months or a year.

containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Remitting Money: — Checks on New York City Banks or Bankers are best for large sums; make payable to the order of **Orange Judd & Co.**.....**Post-Office Money Orders,** for $50 or less, are cheap and safe also. When these are not obtainable, **register** letters, affixing stamps for postage and registry; put in the money and seal the letter in the presence of the postmaster, and *take his receipt for it.* Money sent in the above three methods is safe against loss.

Postage: On *American Agriculturist*, 3 cents a quarter, in advance; on *Hearth and Home*, 5 cents per quarter. Double rates if not paid in advance at the office where the papers are received. For subscribers in British America, the postage must be sent to this office for prepayment here. Also 20 cents for delivery of *Hearth and Home* in New York City.

Bound Copies of Volume Thirty-one are now ready. Price, $2, at our office; or $2.50 each, if sent by mail. Any of the last sixteen volumes (16 to 31) will also be forwarded at same price. Sets of numbers sent to our office will be neatly bound in our regular style, at 75 cents per vol. (50 cents extra, if returned by mail.) Missing numbers supplied at 12 cents each.

Clubs can at any time be increased by remitting for each addition the price paid by the original members; or a small club may be increased to a larger one; thus: a person having sent 10 subscribers and $12, may afterward send 10 more subscribers with only $8; making a club of 20 at $1 each; and so of the other club rates.

Delivery of Chromos.—We have delivered, at this date, all the Chromos to our subscribers, who have either called for them in person, or who have forwarded payment of postage or transportation if to be sent by mail or express. On one of our advertising pages will be found extracts from a few of the great number of letters that have come to us expressing the delight of the recipients of these beautiful pictures. We would remind those of our subscribers (either to *Hearth and Home* or *American Agriculturist*) who have not yet sent for their Chromos, that if they will remit to us the small amount necessary to pay for packing and transportation, as advertised on second page of cover, the pictures will be promptly forwarded.

"For Information."—Notwithstanding several requests, letters still come to us inclosing 25 cents or fifty cents "for information." We have often asked that only return postage be sent, and those who include more lose 22 cents or 47 cents, as the case may be, as we wish it to be distinctly understood that letters are written as a matter of courtesy, and not for a few cents. We feel much inclined not to answer such letters at all. Please understand that we do not retail information by the 25 or 50 cents' worth, or at any other price.

Mrs. or Miss?—If ladies would sign their names as Mrs. or Miss So-and-So, it would often be of use to those who receive their letters. It is often the case that a lady's handwriting is not what is called feminine; and there being nothing in the letter to indicate the sex of the writer, it sometimes leads to annoying blunders. We once addressed a letter to "Mr. So-and-So, Dear Sir," and the reply came back, "I am neither a Mr. nor a Dear Sir, but an old woman of 60."

The Prairie Farmer is not only a wide-awake cotemporary, but a courteous. When it sees an article in the *Agriculturist* that it thinks may be of use to its readers, it copies and gives full credit. Of course, this is only common honesty, but so many one-horse papers take our articles and accredit them to "Exchange" or even "Ex.," when they do not appropriate them without even this poor intimation that they are borrowed, that it is worth while to refer them to the example of the "Prairie Farmer."

Ayrshires and Jerseys in Texas.—"W. P. G.," Limestone Co., Texas. There is no reason why either Ayrshire or Jersey cattle should not thrive in Texas as well as elsewhere, unless it be that they do not get proper treatment. The disease by which you say they are affected is not murrain. In the first place, there is no such complaint, the word meaning the same as the word plague, and referring to a state of things in which cattle take sick and die throughout a wide district, under similar circumstances. Murrain, as you use the word, is simply impaction of the manyplus, or third stomach, with a quantity of hard, dry, indigestible matter, which causes severe inflammation of the bowels and kidneys, resulting in discharges of blood before death, and sometimes ending in fever and general disorganization. It is most probably caused by either feeding in summer on dry, innutritious, and indigestible fodder, weeds, or coarse stems of grass, with want of water; or by feeding too luxuriously in the spring on young, succulent herbage, after undergoing a course of partial starvation throughout the winter months. If this adverse treatment is remedied, and the cattle cared for judiciously, there will be no difficulty. These sorts of cattle are not suited to picking a living on the prairies at all seasons and in all weathers, as are the natives.

Self-opening Gate.—"A. W." We never yet saw one that we would have if it were put up without cost. But what is the need of closing entrance-gates if there are proper cattle laws? Our own entrance-gate is not closed from the beginning to the end of the year, except now and then to keep in our own animals.

Apple-seed from Pomace.—"A. L. R.," Hanover Co., Va. The seed should be separated before the pomace ferments. The pomace is soaked to facilitate breaking up by beating it, and it is then washed in tubs, the heavier seed sinking, while the fragments of pomace are poured off with the water. Where a large quantity is to be washed, it is done in a long box placed near a stream, from which a continuous flow of water can be had, and is done something after the manner of gold washing.

China Berries.—"Inquirer." The tree "Pride of China" is, botanically, *Melia Azedarach*. We have had no experience in "utilizing" the berries. A decoction of them is said to kill insects on plants, and a writer in a southern paper, quoted by Dr. Porcher, stated that he fed his horses and cows with the berries, mixed with a small portion of corn. We should advise great caution in this matter, as all parts of the plant are medicinally active. Can any of our southern readers advise "Inquirer" what to do with his China berries?

Maine Pomological Society was chartered last winter, and is now organized. Z. A. Gilbert, of Turner, is President; A. L. Simpson, of Bangor, Corresponding Secretary; and George B. Sawyer, of Wiscasset, Recording Secretary. So the good work goes on.

Hydrangea paniculata grandiflora in Wisconsin.—F. A. Woodward writes from Eau Claire: "I notice that you say, '*Hydrangea paniculata grandiflora* is, taken all in all, the finest shrub we have.' You might add to this that it is perfectly hardy here, having withstood a temperature of 40 degrees below zero uninjured. Perfectly hardy means something more here than at the East. In a collection of some fifty varieties of shrubs the number that have survived the winter is exceedingly few."

Horse with Sore Shoulder.—"H. D.," Madison Co., Iowa. A horse with a sore shoulder should not work by any means. The lump existing is the result of bruises from the collar, which is doubtless too large. It will break in time and discharge matter. It should then be washed with soap and water and a weak solution of copperas, and will soon heal. It would be folly to start for Colorado or on any other journey with one of the horses in that condition, or until it is entirely healed. With a well-fitting collar, nothing is needed but to wash the horse's shoulders when the collar is taken off with cold water and soap, and scrape the collar free from all dirt, and keep it smooth and hard. Pads are worse than useless, as they make the skin sweat and gall. Salt-water is equally worse than useless, as the salt keeps the skin moist and makes it tender. Cold water is the very best thing to use.

Right and Wrong.—"W. J.," Red City, Mich. It is not within our province to settle questions of conscience for our readers. If you think it wrong to make money by pandering to whims by breeding Jerseys for color, to grow hops for brewers, or rye for distillers, or apples for cider-makers, pray do not do it. These are questions which each one must decide for himself.

Apple of Sodom.—"A. W.," Cecil Co., Md. This is, in some localities, called "Horse Nettle," and is *Solanum Carolinense*, a near relative of the potato, and the worst weed the cultivator has to contend with, the Canada Thistle not excepted. We know of a nursery which the proprietor had to abandon on account of it. There is no "remedy" for this, nor for any other weed of its tenacious character, except persistent work. Do not let a plant go to seed, and cut the shoots off as soon as they appear above the surface. A friend of ours in Delaware, by taking it as soon as it appeared, cleared his grounds of it. If it gets full possession, the question then will be, Is the land worth what it will cost to clear it? Our Maryland nurseryman thought not, and left his place in possession of the weed.

SUNDRY HUMBUGS.—Whatever else may be expanded by heat, the list of humbugs is not. It must not be inferred that humbugging in its various forms is any less active than formerly; but our correspondents are too busy with their farm labors to send us the usual amount of information, circulars, etc.

LOTTERIES.

We have already given our view of lotteries, whether called by their proper names, or disguised under those of Gift Concerts, Distributions, or what not. No matter how plausible the object, or how great the charity for which these are held, the principle is not changed. Some one makes money at the expense of the community, and gives but a small portion of the proceeds to the charitable object under the cover of the name of which the money was obtained. We showed not long ago that it took ten dollars of the people's money to get one into the Kentucky Library. This Kentucky lottery will probably be kept going as long as there can be found any foolish enough to purchase tickets. Its "Third Grand Gift Concert" has been postponed for ninety days.....Omaha appears to be especially afflicted with lotteries. Just now it is an Orphan Asylum. The circular setting forth the claims of this is funny reading.

CHEAP SEWING-MACHINES.

In answer to those who have sent us circulars of various cheap sewing-machines, we can only say that we have not yet seen a Five-Dollar Sewing-Machine that was worth buying. One of these circulars quotes the Scientific American as indorsing its machine. Upon inquiry of the editor of that journal, we find that he knows nothing of the machine in question. There has been so much humbuggery connected with these cheap machines, that we advise great caution in investing in them.

MEDICAL HUMBUGS.

The collection of these presents but little novelty, but the circulars are of interest as showing the recent method of introducing medicines all over the country. The makers of these nostrums send out small parcels to persons for sale at a good profit. The one who receives the medicines deposits a dollar as evidence of good faith, which he is generally willing to do if he can get medicines worth several dollars—when he sells them. Now, a dollar will not only pay the manufacturer for the stuff sent but gives him a profit, even if he gets no further returns; but the one who receives the medicines, having them on hand, will make an effort to sell them, and by the aid of persuasive circulars he is very likely to get rid of them and want more. Some of the

CANCER QUACKS

have another dodge. They send circulars to post-masters, clergymen, etc., setting forth their ability to cure cancer, stating that they charge $1,000 to $5,000, more or less, according to the ability of the patient, and offer to the clergyman or post-master, if he will put the cancer quack in communication with persons afflicted with cancer, to give him 25 per cent of all the fees received.

RIVAL HOUSES

spring up among these nostrum dealers. The "N. Y. College of Health" inform us, in setting forth the claims of their "Eye Cups," that Ball is dead, and that others

"are now making an unjust use of a dead man's name to sell the identical instrument that was found defective years ago;" while Dr. J. Ball & Co., in their circular, caution against counterfeiters, and say, "They sometimes go under the name of a 'College,' when no such medical college exists in our city." To those disposed to try Eye Caps we say, Don't.....We have also rival "Mountain Herb" medicines, one in New York and the other in Chicago. If obliged to decide between them, we should go for the Chicago "Herb," as that has a circular giving a pathetic account of "How I found Aunt Mary," and it was "Aunt Mary" who found the "Herb." It is all very touching, especially the "religious" part of it. .....We are informed that a "medicine" advertised largely from Jersey city is only one of our well known New York dealers in this line with another string to his bow, over in Jarsey, and that he sends over for his letters. We shall have to look this up.

ANATOMICAL MUSEUMS.

A Boston subscriber sends us a pamphlet concerning a "Gallery of Anatomy," and asks "Is this quackery?" There are in most large cities one or more "anatomical museums." There are so many who know but little about the structure of their own bodies, in whom there is a strong desire to know more, that these exhibitions are well patronized, especially by the young. Very excellent models of all parts of the human body in health and disease, made in wax or *papier-maché*, may be bought in Paris for a moderate sum. These, with a few skeletons and preparations in alcohol, usually make up the stock of these exhibitions. They may be made instructive or not, as they are managed. So far as our personal knowledge of them goes, they have merely served as a sort of advertisement to those who treat private diseases.

RECIPES FOR FERTILIZERS.

A chap is around in Maryland, and probably elsewhere, selling a recipe for making a fertilizer. The price of the recipe is $10, and the purchaser binds himself in a penalty of $500 not to divulge the secret. We have seen one of these recipes, and can not advise any one to invest in such stock. Things that are of real value are not hawked about the country in this manner.

"THE QUEER."

The dealers in counterfeit money are unusually scarce. The unusual efforts of the police, backed by the courts and the city officials, have made dealers in "sawdust" refreshingly scarce at least in New York City. C. Alland has moved West, and dates his taking, confidential letters from Louisiana, Mo.; R. S. Nixon may be found at 34 Amity st.; J. M. Ward & Co., 84 Grand st.

Size of a Bushel.—"Rural." A struck bushel contains 2,150 cubic inches in round numbers (exactly 2,150$^{42}/_{100}$). Any box or vessel whose length, width, and depth, multiplied together, equals 2,150 inches, holds a bushel. Thus a box 13 inches long, 13 inches wide, and 12¾ inches deep, contains 2,154 cubic inches, which will be nearly enough correct for home use. A heaped bushel is 2,750 cubic inches in most places, at least charcoal, coal, and lime are everywhere measured by this bushel; and a box or other measure, or a heap or corn-crib needs to have its contents reduced to cubic inches and divided by 2,750 to find the quantity contained in heaped bushels.

Sawdust as a Mulch.—"F. W. W." Sawdust, in decaying, is often infested with fungus, and this has been found injurious to plants. As a mulch for strawberries it is useless, as the fine particles are thrown upon the berries by the rain.

French Stocks.—W. D. Baker, Fayette Co., Pa. A "French stock" is, of necessity, no better than any other stock. Some stocks can be more certainly and more cheaply raised abroad than here, and our nurserymen often find it to their advantage to use imported stocks. If any one has charged you 75 cents to $1.50 for pear, plum, and quince trees of ordinary nursery size, for the reason that they were worked on French stock, you had next time better buy of some other dealer.

Rose-bugs on Grape-vines.—"M. D. B." The only remedy we know of is to shake them off early in the morning, when they do not fly readily, and catch them in a pan of water.

Sowing Grass and Clover in the Fall.—"B. D.," Noll Co., Ohio (and several others). The question of success or failure in sowing timothy and clover immediately after harvest depends on the quality of the ground and the weather. With good, rich soil, grass and clover will take in spite of very dry weather; but with an average amount of rain, they will be sufficiently advanced to resist the winter on moderately good soils. We would, on such ground, sow twelve quarts of timothy and six of clover, harrowing the ground well before and after sowing. The last harrowing should be light. We, on one occasion, succeeded in getting an excellent stand by sowing, after a crop of wheat was harvested, a bushel of buckwheat with the grass seed, and leaving the buckwheat to be cut down by the frost. It was a protection to the grass both from heat and frost.

Summer-Pruning the Grape.—"M. D. B." We do not know in what sense you use the term "summer-pruning." If you mean the pinching of laterals, it should be continued as long as they push. There should be no other summer-pruning than that which can be done by the thumb and finger.

Steam-plow.—"B. B.," Plymouth, N. H. The various experiments in steam-plowing have not, as yet, progressed so far as to warrant any person in saying definitely whether it is to be a success or a failure in this country during this century. That it will succeed and be largely used, we do not doubt—in time—but only in level districts and on large farms. We would recommend no one to experiment except some public-spirited person who could afford to lose $10,000.

Skin Diseases in Dogs.—Prof. Williams, veterinary surgeon, is quoted by the Medical and Surgical Reporter as saying that skin diseases in dogs require to be treated with great care. Applications that may be used upon other animals with safety will upon the dog produce great disturbance, and even death. For this reason he has abandoned carbolic acid, no matter how dilute, in canine skin diseases, as the effect is sometimes deleterious and fatal. He finds the best application as a stimulant to the skin in dogs to be sublimed sulphur and carbonate of potash, each a drachm, made into an ointment with one ounce of lard.

Agricultural Colleges.—Last month we referred to the trouble that had attended the disposition of the national land grant by the different states. There has long been much dissatisfaction in Illinois, and now the papers talk about a Credit Mobilier as connected with the college—we beg pardon, University—at Champlain.

The Sheep-Tick.—"W. L. L.," Washington Co., Pa. The sheep-tick may easily be extirpated by dipping the lambs after the sheep have been sheared. While the wool of the sheep is short, the ticks, to escape the light, go upon the lambs and accumulate in such numbers as to greatly annoy them and interfere with their growth, and often kill them. If the lambs at this time are dipped in a solution of carbolic sheep-dip, the ticks will be killed, and the flock freed for this season from their persecutions. A barrel sawn in halves or a large wash-tub or a watering-trough may be used for the purpose, and a five-pound can of the dip will make fifty gallons of the solution. It will cost $1.75, and may be had of Orange Judd & Co., 245 Broadway, New York.

Large Hogs.—"H. T. S.," Unionsville, Ct., sends us the following weights of some Chester Co. hogs as follows: One nearly two years and a half old dressed 818 pounds. One pig nine months and twenty-five days old dressed 510 pounds. This was fed by a neighbor of "H. T. S.," and was sired by the first-mentioned hog.

Value of Coal-ashes.—"A Farmer." Coal-ashes are useful on all soils mechanically, loosening a heavy clay and improving sandy loams. They contain lime, alumina or clay, silica or sand, and sometimes notable quantities of potash and phosphoric acid.

Farming and Hunting.—A "Young Man," Mount Vernon, Ill., who wants to go where manure is not needed (at least at present), and where he can get some hunting to rest him occasionally, should go to Western Kansas, where buffalo and antelope are plentiful, and where he will have an excellent chance for sheep or cattle grazing. There he will have also good air, good water, grass, and game, which he is in search of.

Keeping Milk Sweet in Summer.—"A Subscriber" can only keep his milk sweet in hot weather by the use of ice, or placing the pans in a stream of cold spring water; attention to cleanliness of the pans is absolutely necessary.

Cheese Factories in Kansas.—"Farmers' Club." Farmers in Kansas are acting wisely in looking to the establishment of cheese factories. This is one of the methods of manufacturing produce whereby the raw material which will not bear transportation is changed into an article of much higher value on which the freight bears proportionately very much less. Kansas is very well adapted for dairying and cheese-making, and farmers' clubs can not do better than gather and spread information upon this subject. The cost of erecting buildings and furnishing them will be somewhat higher than in the East, but an advantage will be gained in the less cost of land, labor, feed, etc., and the consequent less cost of the finished product. The cheese eaten in the West is from New York factories chiefly, and there will be another advantage gained in the saving of the freight now paid on this cheese. The building needed for the milk of 600 cows might be put up for $3,000, even in Kansas, if of wood. Brick would be preferable, although it would cost possibly 50 per cent more than this. The fittings would cost $1,500 or $1,600. The associated principle works as well as any other. The yield of cheese is at the rate of one pound from ten pounds of milk. We believe there is a factory in operation in Kansas, or at least there was, with what success we have not learned. There are over 50 in Illinois, and 30 or 40 in Wisconsin, many of which use the milk of 200 cows or less.

Vine Punctured by Insects.—"J. C.," Royalton, O., sends us grape canes which are punctured sometimes for the entire length of a joint so as to split the twig quite down to the pith. Small overlapping eggs are laid in the fissure. The eggs are evidently those of a tree-cricket, probably the Snowy Tree-cricket (*Œcanthus niveus*) which, according to Mr. Riley (in Am. Entomologist), is often very destructive in the far West, not only to the grape-vine but fruit trees and even willows. If J. C. hatches out the eggs in a bottle as he proposes he will probably get a small cricket less than an inch long, the male of which is ivory white.

Composting.—"J. J. S.," who writes from Columbus, but which one is not stated, asks if he should mix any fertilizer with a compost of marl and manure. No; such a plan is not to be recommended. It would not be what is understood as a compost. That is a mixture of such matters as swamp-muck, leaves, refuse vegetable matter, sods, lime, or plaster together in such a way that fermentation may take place, and the materials become well-rotted and broken down. Stable manure may be used in such a mixture to start the fermentation as a sort of leaven. But the mixture of concentrated fertilizers, which are of themselves sufficiently fine and soluble, with stable manure and other coarse materials is not advisable. It is better to apply them to the soil separately. The bone-dust referred to is probably as it is represented to be. The parties have a reputation for respectability, and that is all that purchasers of commercial fertilizers have to rely upon.

Wool Box.—"J. D," Rock Co., Wis. The wool box described in the *American Agriculturist* of May, 1872, is not patented.

Corns in Horses' Feet.—A "Horseman," Orange Co., N. Y. Corns are not a disease, but result from injuries to the sole of the foot. When the sole is pared thin, a blow from a stone which strikes it injures the sensitive portion of the foot which should be protected by the sole, and an effusion of blood or serum occurs, which presses upon the bruised part and causes lameness. A red or discolored spot is seen. This is supposed to be a corn, and is pared away until it bleeds, and instead of good being done there is much evil. If the shoe is also improperly put on, so that the bearing is unequal, parts of the sole become bruised with the same result. A remedy is to foment the sole with hot water, or to stuff the foot with tow, which should be soaked in hot water repeatedly. If a badly-fitting shoe is the cause, it should be removed before the fomentations are applied, and refitted with an even bearing all round, but especially at the heel, when the lameness will soon disappear. If the shoes were always well fitted, and made long at the heel, and the sole and frog not pared down until no protection to the foot is left, there would be many fewer lame horses.

About Whiffletrees.—"W. H. M.," Montgomery Co., Pa. The length of the whiffletree has no effect whatever on the draft of a team. One of three feet will be equally effective as one four feet or five, and *vice versa*.

Earth-Closet Manure.—"L. B. Y.," Meriden, Ct. The doubt thrown upon the value of earth-closet manure by a distinguished agricultural chemist relates to the supposed loss of ammonia in the mixture of refuse and earth after a lapse of time. This view is not accepted by some other chemists whose analyses go to show that the ammonia or nitrogen does not disappear. Practically, however, it is not of much importance, for if some of the ammonia is necessarily lost we can not help it, and must accept what we can save on the principle of "half a loaf rather than no bread."

Sulphur and Salt.—"G. C. A." From its active effect on the system particularly through the skin, it is dangerous to give sulphur in excess to stock in the winter time, without good reason and proper accompanying care. A proper allowance is useful especially to sheep and pigs. Generally one ounce of sulphur to a pound of salt will be sufficient when given regularly in the feed.

How to Raise Turnips.—"W. T. S.," Arkansas. On a light soil a proper preparation for a crop of turnips would be a deep plowing and harrowing as early as possible. When the weeds have started another plowing and harrowing should be given. The land when well mellowed should be laid off in drills 30 inches apart, by taking two furrows with a single plow, or one with a double mold-board plow. In the drills well-rotted stable-manure should be spread at the rate of 10 or 12 loads per acre, or more if it is at hand. The manure is then covered by throwing a furrow from each side on to it. The ground is then harrowed lengthwise of the drill and rolled. The seed is sown either by a turnip-seed drill, or by hand in a light furrow made with the edge of a hoe and covered lightly. The crop should be kept free from weeds. See article in July, 1872, on raising roots.

To Prevent Lice on Sitting Hens.—"C. C.," Fauquier Co., Va. If the nests of the sitting-hens are lined with tansy freshly gathered, they will not be infested with lice. Old nest boxes should be treated to a bath of scalding lye before they are again used. Grease must not be used on the hens or the eggs will not hatch. Lime is not of any use. We have known a nest in a barrel of lime where the eggs lay on the lime, completely infested with lice.

To Empty a Cesspool.—"J. A. G.," Taneytown, Md. The method of emptying a cesspool and utilizing the contents was fully described in the *Agriculturist* for October, 1872.

Geo. M. Patchen.—In reply to "L. D. S.," Darien, Ct., "W. S. B." favors us with the following history of the horse in question. "He was not a thoroughbred; was foaled on the farm of a Mr. Sickles, near Freehold, N. J. He was by Cassius M. Clay, he by old Henry Clay, and his dam was by a brother to Trustee the famous trotter. He was thus a cross of the Bashaw, Messenger, and imported Trustee blood. His last owner was Mr. Waltermire, of New York." This agrees with the history of the first Geo. M. Patchen as given in Wallace's American Trotting Register, in which are mentioned several other Geo. M. Patchens, descendants of the old horse. The old horse died in 1864.

Hand-Mill for Wheat.—"Subscriber," Acushnet.—There are hand steel mills which will grind wheat into meal, which, sifted through a fine hair or muslin sieve, will produce a coarse wholesome flour. Probably some of those dealers in implements and seeds who advertise in the *Agriculturist* keep or would procure these mills. Write them.

Composition of "Suint."—"G. P. D.," Delaware Co., Pa. The yolk of wool, which is called *suint*, contains a large portion of potash. It is this alkali which causes the oil of the yolk, in combination with it, to be soluble in water. It has been stated by a French chemist, Prof. Harrez, in a report to the Chamber of Commerce of Verviers, Belgium, that on an average one-third of the fleece is *suint*, and one-third of that is potash. Thus, a fleece of four and a half pounds unwashed would yield half a pound of potash. For this reason the water in which sheep or wool have been washed should not be lost, but should be spread over grass land, or used in any other convenient manner.

Removal of Tumors.—"A Subscriber," Washington Co., Iowa. Written directions would be insufficient to enable one to remove tumors from the body of a horse. A competent surgeon should make the operation when they are "so large as a quart measure." Smaller tumors may often be removed by the application of iodine ointment daily, but so large a one as this must be removed by the knife.

Superphosphate or Plaster for Potatoes.—"T. F.," Cheshire Co., N. H. The apparently inconsistent items in regard to the action of these manures on potatoes, in the *Agriculturist* of April, admits of the following explanation. They were written by two different parties, each of whom has grown the crops they speak of in different states, and on soils of a different character. The crops manured with superphosphate were on a gravelly loam, in which the fertilizer used would be preferable to ammoniacal manures. The soil was free from lime, and well filled with the remains of a heavy clover sod plowed under. There was, therefore, abundance of ammonia-producing matter in the soil. A part of the field, exactly one acre, produced over 600 measured bushels of Harison potatoes; and in one spot the yield was very much larger than this average. Our associate who uses ammoniacal manures farms on a clay soil, exactly the soil in which ammonia would develop the lime, potash, and phosphoric acid which are more abundant in such a soil than in gravelly loams. Nothing is more certainly established than that the action of superphosphate, as well as that of ammoniacal manures, depends greatly on the soil in which it is used. Therefore the first thing a farmer has to learn is the character and needs of his soil, and adapt his manures to them.

Potash.—"F. D.," Richmond, Va. Potash, as known in the market, is the product of wood-ashes, which are leached, the lye evaporated to dryness, and the resulting salts melted. It comes to market in broken cakes, which have the shape of the iron kettle in which it was melted. It can be bought at wholesale at $8.50 per barrel of about 500 pounds. The German salts, kainit, is an impure sulphate of potash; the commercial potash is impure carbonate of potash. Nitrate of potash, or saltpeter, costs too much for its profitable use in our agriculture. The nitrogen from dried blood and flesh is cheaper.

Hiring Grain-bags.—In England, "sack-hiring companies" rent grain-bags for one cent for each bag per week. The bags, or sacks as they are called, are made of very strong material, and hold four bushels. It is only about a dozen years since this system was introduced, but it has already become quite common for farmers to depend almost entirely on hired bags. When they have thrashed a quantity of grain they rent the necessary number of bags, and when the grain is sold the farmer directs the purchaser to return the bags direct to the company. If the grain-dealer or miller sees fit to keep the bags beyond the specified date he has the privilege of doing so, but he, and not the farmer, must pay the company one cent per bag per week for such extra time. We do not see why some such system could not be introduced here. When we consider that a two-bushel bag costs us forty cents, and that a large proportion are in use only a few days in a year, and that loss and deterioration is not less than 20 per cent, it would seem that many farmers would gladly avail themselves of the privilege of hiring bags for a few days.

Five-toed Fowls.—"Subscriber," Gloucester Court-house, Va. Five toes are a blemish or monstrosity in Light Brahmas. The Dorkings and the Houdans are the only breeds in which five toes are admissible.

To Prevent a Roller from Clogging.—"R. G." An iron roller will not clog as much on damp soil as a wooden roller. Your plank roller will be benefited in many respects by saturating it with crude petroleum. It will keep it from shrinking, preserve it from rolling, and lessen the tendency to clog. If you apply all the petroleum that the wood will absorb it will become almost as firm as iron, and will last for many years. But the petroleum needs to be repeatedly applied.

The Land Sales of the Union Pacific R.R. for April, 1873, amount to 11,471 acres, at an average price of $4.92 per acre. The total sales up to May 1st, 1873, were 714,908 acres.

Frauds on Farmers.—A "Correspondent," Carrol Co., Md., who has paid $10 to a party in Maryland for a recipe for making "raw-bone phosphate" has been swindled. The mixture is not a raw-bone phosphate, but a much cheaper compound, of which nearly one-half has no phosphoric acid at all. Our advice in this matter is for farmers to purchase no secrets whatever. The old proverb about buying a "pig in a poke" applies emphatically to all such business.

Not a Bad Thing to Have.—A correspondent in Pennsylvania writes: "I read the *American Agriculturist* with great satisfaction, and, I think, with some profit. Seven years ago I bought a small farm of 27 acres, none of it quite rich enough to grow even a good crop of cinquefoil. I started to improve it without any capital to speak of, either in money, experience, or labor. I made many mistakes, and met with many discouragements, but have never as yet thought of selling out and moving into town again. I have at present, as a basis for the coming summer's campaign against drouth, bugs, weeds, lazy help, and untimely rains, about 15 good two-horse loads of manure, manufactured in part from 15 tons of hay, 2 acres of oats, 3 acres of wheat and rye, 1½ acres of corn, about 4,000 lbs. of chandler's greaves which have been run through a lot of shotes, two tons of bran, and one ton of corn-meal, all composted with sods, sawdust, and whatever trash could be found to mix with it, all of which is to top-dress about four acres of young grass which is to go under for a corn crop two or three years hence."—We are glad our friend likes agriculture and the *Agriculturist*. He has the right ideas in regard to farming. Good manure and good cultivation are effective weapons. But we should be inclined to spread the manure over a larger area.

Dressing Furs.—"G. B.," New York. It would be advisable for a resident of New York city to have furs dressed by some one who makes a business of it rather than to do it one's self, as home-dressed furs never look so well nor feel so soft in wearing as those done by professional furriers. But for the information of those living where furriers do not abound, we would say that furs may be dressed very passably by sprinkling pounded salt and alum on the flesh side, and doubling them up for a few days, and then rubbing them dry with chalk, and smooth with pumice-stone.

Grade or Thorough-bred Pigs.—A young farmer in Connecticut asks our advice in regard to raising pigs. He proposes to buy a pure-bred Chester white sow and a pure-bred Essex boar.—If he intends to raise pigs for the butcher, this is a capital cross, but if he intends to raise pigs with the intention of selling them for breeding purposes it will not answer. He must raise pure-breds. He thinks breeders ask very high prices for thorough-bred pigs. He will not think so when he has them to sell. It requires much care, patience, and good judgment to raise choice thorough-bred animals of any kind, and, as a rule, breeders do not make exorbitant profits.

Plowing Under Rye for Manure.—"I commenced farming three years ago on three acres of mowing land," writes a young farmer at East Eddington, Me., "and I now have 35 acres, and keep 22 head of cattle, three of them thorough-bred Durham. I take the *American Agriculturist*, and have put a good many of its ideas into practice. I would like to ask you one question: At what stage of growth is it best to plow in winter rye for a green manure crop? I sowed a piece last fall that I propose to plow under. I have brought land up that cut only half a ton of hay to the acre to cut two and a half tons by only plowing under one crop of clover and one crop of buckwheat."—The best time to plow under rye, we should think, would be a few days after it has commenced to ear. But why plow it under for manure? Why not feed it to your cattle as a soiling crop, save the manure carefully, and apply it to the land. The cattle would not take out more than ten per cent of the nitrogen, and a still less quantity of phosphoric acid, potash, and other valuable ingredients of manure. The rye would be a useful food, and with your 22 head of cattle on 35 acres you must have a demand for all the food you can raise. You have evidently done well by plowing under clover and buckwheat. You are now in a position to do equally well or better by raising food to be fed out on the farm to stock.

Keeping Pigs without Clover.—A. S. Tipton, Center Co., Pa., who is raising pure-bred Essex pigs and their grades, writes: "Grain is cheaper for my pigs than clover pasture. Will the pigs do as well on the grain if they run in the woods at pleasure? I can not get much bran, but chop corn, rye, and oats together—half corn. Have no roots and no steamer."—The Essex will stand all grain when young and growing as well as any other breed—and better than common pigs; but as they get older you must not feed too much. Still, if they have plenty of exercise, we should apprehend no trouble from pretty liberal feeding. The real point is to feed steadily—not to feed high for a few weeks and then suddenly put them on a starvation diet. We should soak the meal until quite sort, say from 24 to 36 hours, to get it to absorb as much water as possible. Feed it with a large proportion of water—say two quarts of meal to each ten-quart pail of water. This is about the proportion of water in green clover. Let the sows have all they will drink of this slop twice a day. If they get too fat, put only three pints of meal to a pail of water. If not fat enough, put in a little more meal. Let them have all the water they will drink.

How to Kill Canada Thistles.—"T. R. T.," of Winnebago Co., Wisconsin, writes: "I have two small patches of Canada thistles on some land that I bought last fall, but did not know of the thistles until after I had got it, and now I want to ask you how to get rid of them, as I never had anything to do with them before. I plowed the field last fall, and pulled all the roots out of every furrow and laid them on top, but I expect to see plenty of them spring up the coming sum-

mer. I have sown the land to wheat this spring. Will seeding down and pasturing sheep kill the thistles?"—No. A heavy crop of clover, mown in June for hay, before any of the thistles go to seed, and mowing a second time for hay in August, will kill many of them and check the growth of the others. Heavy crops of clover treated in this way, followed by a corn crop or a summer fallow, is a good way to get rid of these pests. But thorough cultivation is necessary. Not a thistle should be allowed to show its head above ground. This will answer "L. D.," Laporte, also.

Arithmetical Problem. — We are obliged to several correspondents, professors, principals, and others who have helped to elucidate the arithmetical problem given in the *Agriculturist* of May last. They arrive at a different result to that given by us, by—to use the words of one—"using a little artifice," and make the result 94 sheep, 1 hog, and 5 cows=100 animals, costing $100. The original inquiry was simply if the question could be solved by alligation alternate, and by the rule generally in use the solution was as we gave it; but by "using a little artifice," or, in other words, working by analysis, the solution is easily arrived at, as given above. Our correspondents will accept our thanks.

Draining.—"J. W. E.," Westerville, Ohio. The distance on each side of a drain that is acted upon by it, depends on its depth below the surface, and the nature of the soil. On some very heavy clays, drains should be laid four feet deep and thirty-three feet apart; on some porous clays, the surface may be dried by drains sixty-six feet apart, at four feet deep. Again, other soils may be drained at a depth of three feet, while others may need drains six feet or more in places before they are rendered dry. Unless a very strong spring should be cut, main drains of three-inch tile and others of one and a half-inch will be found sufficient.

Water in a Milk-trough.—"J. W. E.," Westerville, Ohio. The water in a milk-trough used for cooling purposes, if ice is added to it, may remain in the trough two days. But as water readily absorbs the impurities in the atmosphere, and as there is a strong animal odor evaporated from the cooling milk, which the water will take up to some extent, it is well to change it as often as may be convenient, even though that be every twelve hours. A running stream is preferable to standing water in every case.

Scales on Chickens' Feet.—"I. M. R.," Sumner Co., Kansas. We have used a weak solution of potash, or "concentrated lye," to wash the scaly legs and feet of fowls with success. But we believe it to be constitutional in the fowls, and have always picked such out for fattening for the table or market. It is always best to weed out all fowls with this tendency, reserving only thrifty ones, and keep them *dry and clean*.

The Mole-plow.—"E. S.," Allen Co., Ohio. The mole-plow may be made very serviceable in draining wet lands where it is not convenient to use any other method. The plow has a sharp coulter, at the bottom of which is fixed a round, wedge-shaped share, which, being drawn through the soil fourteen or sixteen inches below the surface leaves a sort of mole-burrow shaped channel, through which the water escapes. This sort of plow is also excellent for breaking up an impervious hard-pan, and allowing surface water to escape through it. The best and cheapest plow of this character we know is the Miner Plow, made by R. H. Allen & Co., Water street, New York.

Roots of Trees in the Well.—"J. C. L.," Warsaw, Ind. The presence of many roots of fruit or shade trees in a well is sufficient to cause a bad taste in the water, due to the presence of decomposing vegetable matter. We would go down the well and cut off the roots with a sharp knife every season. Wells should be occasionally cleaned out, especially if they are shallow.

Preparing Ramie.—"A. G. P.," Glyn Co., Ga. A machine for preparing ramie, or China-grass fiber, is a desideratum not yet supplied, at least in this country. We notice a report of its culture and preparation for market in Europe with profit, but do not know by what process it is prepared, unless by hand.

Castration of Colts and other Animals.—"W. R. T.," New Kent, Va. Unless there was something which would prevent or make it inconvenient, we would castrate young stock as early as possible. The younger they are, the more easily they get over the effects of the operation. Lambs and young pigs rarely suffer any inconvenience if operated on before they are weaned. We have seen scores of young lambs castrated by simply clipping off the scrotum with a pair of sharp sheep-shears when they were a week old lose scarcely a drop of blood, and the wound healed at once. For operating on colts with perfect safety, without loss of blood or need of firing or clamps, an instrument called an *écraseur* is made and used in Philadelphia.

Eggs for Winter Use.—"A. B. M.," Clarion Co., Pa. Eggs can not be put up now for winter use without losing a great many. It is better to wait until September, when the fowls, having had a good run on the stubble fields and grain barns, begin to lay plentifully, and eggs become cheap. Then they may be put down in kegs of strong lime-water, or milk of lime, and kept in a cool place for several months. Or if they are carefully oiled with linseed-oil, and packed in bran or dry oats, they may be preserved in good order.

Abortion in Cows.—"J. B.," Carthage, Mo., writes that he has had several cases of abortion in his herd which could be distinctly traced to the ill-effect of the odor from dead animals. In one case three cows aborted when the only known or supposable reason was the effluvium from three dead cows which were permitted to lie in an adjoining field to be eaten by hogs. Another case occurred, and a dead hen was found beneath the feed-box, under the cow's nose. He says if foul odors will bring about this effect in one case, why may not other foul odors have the same effect in other cases, and a cause little suspected be the origin of the mischief in many mysterious cases?

To Cure a Snake-bitten Horse.—"G. G. T.," Madison Co., Tenn. An old wound from a snake-bite, which now swells and discharges freely, might probably be cured by poulticing with bran or linseed-meal poultices frequently repeated and put on hot. When the wound is well cleaned, it might be washed with a solution of carbolic acid (1 part acid to 100 of water), or with a weak solution of chloride of zinc, and then healed as a common sore by injecting a little compound tincture of benzoin daily.

Rye for Cows.—"J. T. G.," Hanover Co., Va. If the rye is free from ergot, or what is commonly called "spurred rye," which consists of a dark brown fungoid body, an inch or less in length, and an eighth of an inch thick, growing on the ears, it may be safely fed to cows at any time. But as the ergot may be so easily overlooked when only slightly developed, it would be safer not to feed it to cows in calf after it has headed out.

Cholera in Chickens.—"B. F. H.," Washington, Pa. The best "cure" for cholera is prevention. Keep the fowls dry, and their roosts and yards perfectly clean and sweet. Change their food occasionally, and now and then give cooked meal in thick mush, or boiled potatoes mashed with meal. Cholera is very often the reaction from constipation, caused by too much dry grain. A little copperas in the water is a good tonic, and might be given once a week. To cure the disease when it has occurred, we have known alum-water given for drink, and food soaked in alum-water, with pills of bread crumb and red pepper, to be used. But it is much easier to prevent than to cure; at least we have always been successful in preventing it in our flocks.

Oil-cake for Poultry.—"A. C.," Haverhill, Mass. There is no necessity to give oil-cake or any other grain-feed than corn to poultry while that can be procured. With some meat-scraps, pounded oyster-shells or bones, a little chopped cabbage or other vegetables, and corn in moderation, poultry will do very well without any additional feed.

Poultry-farming. — "C. H. G.," Salt Lake city. Where eggs are thirty cents a dozen the year round, and fowls fifty to eighty cents each, it certainly will pay to keep poultry. On ten acres, one thousand fowls might be kept by using five acres alternately, but it would only be through tact and experience that it could be successfully done. It would be safest to commence with one hundred or two hundred, and increase gradually. The feed should be mainly corn, boiled potatoes, chopped cabbage, and meat-scraps, with broken bone and plenty of clean water. If the houses are whitewashed monthly, cleaned out weekly, and the roosts greased or oiled once or twice a month, there will be no lice. Lice and filth accompany each other. A hen will raise, on the average, ten chicks, and produce, for sale, five dozen eggs besides, at least.

Leaden Pipe.—"J. C. S.," Rose Point, Pa., says in relation to the use of lead pipe that science is a good thing, but it needs to be corrected by experience; and therefore, admitting that the use of lead pipe for conveying drinking water is dangerous scientifically considered, yet experimentally he has found it to be perfectly harmless. Even a leaden tank for storing drinking water has been found perfectly innoxious by one of his friends, and thus practical experience overcame theoretical prejudice. Nevertheless the use of lead pipe *is* always dangerous; it is least so when a constant current of water is passing through it. No drinking water should be stored in a leaden tank. And further, while there are certain impurities in some waters which cause them to act less vigorously on the lead than pure water, without knowing whether these are present or not there is a great risk run. The purer the water the more rapidly it dissolves the lead.

When to Water Cattle.—"A Farmer," Grape Island, W. Va. The usual time to water cattle or horses is after feeding in the morning, a little before and after feeding at noon, and before feeding at night. These times are most convenient, and are probably as good as any other time that could be chosen. Copious watering at any one time should be avoided.

Plaster in Stables.—"J. E. M." sees a statement in the *Agriculturist* that plaster will not fix ammonia unless it is dissolved in water; why then, he asks, is plaster recommended to be scattered in stables and manure-heaps to fix the ammonia? For the reason that stable floors are always wet, and much liquid is in the manure, and the same is true of manure-heaps. Then the plaster scattered is dissolved by the water, which holds much ammonia in solution, and decomposed, and sulphate of ammonia is formed, which is not volatile. Manure heaps should be kept moist that the solution and fixing of the ammonia, which is always forming during fermentation, may be completely effected.

Benefits of Snow.—"Subscriber" asks in what way snow is beneficial to agriculture. It acts as a protection to meadows and wheat fields against severe cold and sudden changes of temperature. It also contains a larger proportion of ammonia than rain-water usually does, and thus, by furnishing a supply of this valuable fertilizer, has gained the name of the "poor man's manure;" but it is equally true that it may have also gained this name for the reason that the man who relies upon it as the sole source of his manure will always be a poor man.

Thumps.—"G. G. T.," Madison Co., Tenn. Thumps is caused by spasms of the diaphragm, or membrane which separates the abdomen from the chest. It is the result of over-driving or over-exertion. It may sometimes be relieved by placing the horse in an airy, cool place, and giving him a copious drink of cold water. We know of no permanent cure.

Composting "Salt-fish."—"T. J. J.," Bath Co., ——, says he has read a good deal about composting fresh fish, and now would like to know how to compost salt-fish, which he can buy at six dollars per ton.—Is salted fish here meant, or salt-water fish as distinguished from fresh-water fish? We can not understand how salted fish can be for sale at that price. However, there is no difference in the method of composting whichever it may be. It should be mixed with earth in layers until rotted, and then spread upon the plowed soil and harrowed in. Such manure should be kept near the surface.

Thomas Harrow.—"C. W. M.," Springfield, Vt., asks if the Thomas Harrow is fitted for use amongst stones and rocks.—By no means. The teeth are very light, and are not adapted to such rough usage. But why not get rid of those stones, at least the loose ones? In plowing stony soil, if the stones are all thrown into the furrow and covered by the next furrow slice, this harrow, or any with sloping teeth, will not bring them up again to the surface; and no stone that can not thus be covered should be allowed to lie upon the surface even in Vermont.

Loss of Milk.—"N. S.," Andover, Mass., has a cow that had an inflamed udder at last calving, and since then two teats have been dry. He would know whether or not it is worth while to try her once more with another calf, or slaughter her. It is quite possible that the cow, with good care and attention, may come out all right next time. She should be watched closely, and if the udder becomes hot or hard, it should be bathed in warm water and rubbed gently with the hand. The cow should be kept warm, and a pound of epsom salts, with one ounce of powdered ginger, be given in slightly warm water, with a teacupful of molasses in it. If the trouble again becomes serious, the udder should be rubbed twice a day with one ounce of tincture of iodine and one ounce of soap-liniment, mixed. If this should

be the result, however, the cow's period of usefulness may be considered as passed, and she may be turned into beef. The milk from an inflamed udder should not be used even by calves or pigs.

Value of Cotton-seed as Manure.—"E. O. N.," Tracy City, Tenn., asks, (1st.) What is the value of cotton-seed, when well rotted, as manure? (2d.) Is the decorticated seed cake worth more as a fertilizer than the seed? (3d.) Why are the above values assumed, the values to be given in comparison with Guanape guano at $90 per ton?—*Replies:* (1st.) The value of cotton-seed consists principally of the nitrogen and phosphoric acid of the kernel, the husk being of no account to speak of, excepting for its potash and a little phosphoric acid. It may therefore be discarded from the calculation. If the husk comprises half the weight of the seed—which is not far from the mark—there will then be in a ton of cotton-seed, according to the analyses of Prof. Johnson, and Prof. Voelcker of London, about 67.6 pounds of nitrogen (equal to 81.5 pounds of ammonia), and 29 pounds of phosphoric acid, which will give a value of $14.38, as shown in the table below. (2d.) The cotton-seed cake being free from the hull, will contain just double the above quantities of fertilizing matters, and bear double the above value—equal to $28.75 per ton; the loss of oil in pressing the seed does not reduce its value in this respect. (3d.) The above values are assumed from the known constituents of the cotton-seed and the guano, and from the standard value set upon the ammonia or the nitrogen from which it is formed, and the phosphoric acid in the market, on which the market prices of the fertilizers are based. The following table sets the matter forth as clearly as may be, viz.:

Composition of Cotton-seed Cake:

Nitrogen, 6.76 per cent = 135 lbs. per ton, @ 17c. =	$22.95
Phos. acid, 2.90 per cent = 58 lbs. per ton, @ 10c. =	5.80
	$28.75

Composition of pure Guanape Guano (as per analysis recently made in New York).

Nitrogen, 10.03 per cent = 200 lbs. per ton, @ 17c.	$34.00
Phos. acid, 16.3 per cent = 326 lbs. per ton, @ 10c.	32.60
	$66.60

These values are the intrinsic values of the two articles for their nitrogen and phosphoric acid alone. The market value of the guano above described is $75 per ton in New York. If the value is to be estimated at $90 per ton, a proportionate addition should be made to the value of the cotton-seed.

Making Manure.—"J. C. C.," Knoxville, Tenn., writes that he beds his cattle heavily with leaves, allowing them to remain in the stable until they become saturated with the liquid manure, when the whole is removed to the manure shed. By doing this he saves all the liquid. He thinks this plan open to the charge of being slip-shod, but it makes the best manure. This plan is far from being a slip-shod plan; it is followed by eminent farmers who, by using abundant bedding, clean out their feeding-stalls at the end of the season only, when the manure is in the best condition.

Alsike Clover.—"J. C. McL.," Plymouth, Iowa. So far as our experience has gone, alsike clover is preferable to red clover only on wet soils, where the red clover is apt to be heaved out by the frost. On such soils it succeeds well, and makes a good crop of hay. This, we believe, is consistent with the experience of others. It can not be cut a second time for seed; if grown for seed, the hay is sacrificed.

Consumption of Food.—"J. C. R.," Randolph Co., Ill. As a general rule, cattle, horses, and sheep will eat three per cent of their live weight of fodder per day—that is very near their own weight every month. But there is a vast difference amongst them as to the profitable results of their consumption of food. Some will merely keep alive, while others will increase in weight and size, or produce milk in a much greater proportion for the food consumed.

Suckering Corn.—"A. B.," Mansfield, Ohio. We would certainly advise any farmer to remove suckers from corn, especially if he has planted a variety that suckers profusely. The suckers, if used for fodder for cows, or feed for hogs, will pay for the trouble, and the corn crop is benefitted.

Four Months in Texas.—"R. R.," Adams Co., Ill., writes that he spent four months of the past winter in Texas. There he saw a rich prairie soil which produces wheat, corn, oats, and cotton, and all the time during January and February the plows were running. Land is there $3 to $5 per acre, and farms $10 to $25. The wild grasses are disappearing from over-pasturing with cattle and horses, hundreds of which he saw dead upon the prairies, starved for want of feed. As usual in new countries, old things are passing away, and new methods of making [illegible]ing must be followed, for cattle raising is fast playing out in Central Texas.

"Do Good and Make Money."—A fine opportunity to secure both these desirable results is offered by the publishers of *Hearth and Home* and *American Agriculturist*. They have established an Agency Department, and all suitable persons may find *a capital and paying business* in an Agency for both the valuable papers above mentioned, with their beautiful Chromos for each subscriber. For particulars, address Frank B. Van Siclen, Manager of Agency Department of Orange Judd & Co., 245 Broadway, New York.

Fourteen Weeks in Human Physiology, by J. Dorman Steele. Pp. 238. A. S. Barnes & Co. This little volume comes to swell the list of those existing upon the same subject. It is by a teacher of repute, and by him is intended for school use. Altogether, we like it, notwithstanding some rather loose statements which here and there occur. The mechanical execution is good, and the introduction of some figures, on which more than usual care has been bestowed, illustrative of the bones, muscles, blood-vessels, etc., is a special feature, well calculated to give clear ideas on these important subdivisions.

Turnips amongst Corn.—"W. S.," Binghamton, N. Y. White turnips may be sown amongst corn, without injury to the crop, any time up to August 1st. The last time of cultivating the corn, a pound of seed may be scattered along the rows on the loose soil. If a rain soon follows, no harrowing is necessary; if not, a brush should be drawn up and down the rows. Ruta-bagas may be sown in the same manner, not later than the 10th or 12th of July.

Bog-spavin.—"W. C. M. B.," Washington Co., Mo. Bog-spavin is an enlargement at the hock-joint of the horse, and is a disease of the joint itself. Blood-spavin, which is also called thoroughpin, is an obstruction of the vein by the swelling caused by the bog-spavin, and therefore these often exist together. But they are two different things. Bog-spavin rarely causes lameness, and, being often hereditary, is frequently incurable. The only treatment is by applications of iodine ointment, once in the week, with lard every day; or by rubbing the joint with a liniment of two ounces of olive oil, one ounce of oil of turpentine, and one ounce of creosote, every second day. The feed should be of the best character, as spavined horses are never in complete health.

Value of Peat-ashes.—"H. B.," Port Jervis, N. Y. Peat-ashes are a valuable fertilizer; and if the peat is formed by the remains of woody plants, and is heavy and fibrous in texture, the ashes are worth more than the soft, pasty peat resulting from mosses and succulent plants. Experiments recently made in France showed that oats, wheat, and strawberry plants grew vigorously and bore heavily when planted and grown in a soil consisting largely of ashes of peat.

The Force of the Wind.—"H. Y.," Baxter City, Kansas. The variation in the pressure of the wind in pounds, per square foot, is as the square of the velocity. Thus a wind moving five miles an hour exerts a pressure of .123 of a pound per square foot, while a wind at ten miles an hour, which is twice the rate, exerts four times the pressure, or .492 of a pound to the foot. The rule for finding the force of the wind is to multiply the surface, in feet, by the square of the velocity in feet, and the product by .002288. The result is pressure in pounds.

Steaming Food.—"A. P. S.," Newark, N. J.—When it is said that it will not pay to steam food for less than twenty head of cattle, what is meant is that it will not pay to provide apparatus specially for less than that number. If a person has the boiler and steam-pipes, and uses them for other purposes, he may use them for this profitably for five or six head.

Wheat and Chess.—"B. F. B." If a man should shut up a dog in his barn at night, and in the morning find a cat there instead, he would not be likely to jump at the conclusion that the dog had changed into a cat. He would know that there must have been a good reason for the substitution, even if he never found out what it was. So when chess grows in a wheat-field there is an equally good reason for its appearance, or for that of any other weed that may manifest itself, without supposing that an impossibility equal to the change of a dog into a cat had occurred.

Folding Sheep.—Mrs. "P. I.," Charlotte, N. C. In the *Agriculturist* of November, 1871, the method of making hurdles for folding sheep was described and illustrated. The folding consists in dividing off a part of a field of clover or roots, by erecting the hurdles across it, and, as the crop is fed off, removing the hurdles farther back, and so pasturing the whole field by small portions at a time.

Warts on Cows' Teats.—Mrs. "S. E. H.," Shawnee Co., Kan., can remove warts on cows teats, if they are small, by clipping them off with a pair of sharp shears, and touching the spot with a little powdered copperas to stop bleeding. If they are too large to do this easily, they should be wetted daily and then rubbed carefully with a stick of Lunar Caustic (Nitrate of Silver).

Potatoes for Cows.—"Subscriber." Small potatoes, if boiled and fed when nearly cold with some bran or meal, are an excellent food for cows. Fed raw, they sometimes produce irritation or looseness of the bowels, which considerably reduces the flow of milk.

Drawing Manure.—"Subscriber." Manure may be drawn and spread at any time, excepting on frozen ground, or where it will be washed from the surface; but it should never be left in heaps in the field at any season of the year. See "Ogden Farm Papers" in March *Agriculturist*.

A Cord of Manure is 128 cubic feet; a wagon box 10 feet long, 3 feet 2½ inches wide, and one foot deep holds a quarter of a cord.

Sowing Grass Seed.—"Blue Grass." When grass seed is to be sown without any sheltering crop, it is necessary to prepare the ground by plowing and careful harrowing, then to sow the seed, and harrow or brush it in with a brush or light harrow—as early in the spring as possible.

Ground-Sumac Waste.—"E. M. H.," Great Falls, N. H. The value of ground-sumac waste from a tannery would be, when it is rotted, about equal to rotten leaves. It would make a valuable material to bed cattle with, and add to the bulk of a manure pile, and for this purpose it ought to be worth at least two dollars a cord.

Soil for Barley.—"W. H.," Vernon Co., Wis. Barley will not thrive on the rich, black loam of a river-bottom. A rich, sandy, upland loam is the most suitable soil, and on such a soil there is seldom any trouble about want of stiffness in the straw. The best application to stiffen the straw is salt, at the rate of three or four bushels per acre, sown in May.

Waste Salt.—"J. B.," Port Richmond. Waste salt, or salt water of any kind, may be profitably applied to an asparagus-bed, at the rate of a peck of salt to the square rod of ground. If there is no asparagus-bed—but there ought to be in every farmer's garden—or the salt is in too great a quantity to be thus used, it may be scattered over a meadow or added to the manure pile.

A New Subscriber's Questions.—Directions for reducing bones, preparing blood and spoiled fish for manure, and the value of tan-bark, have all been fully given in the *Agriculturist* for 1872, which can be had for $1.50. It is impracticable for us to repeat what has been told so recently in our columns.

Patent Hatching-Boxes.—"J. F.," Peapack, N. J. Our advice to any person who desires to patent an artificial hatching apparatus, which he has invented, is simply "Don't." We would never advise any one to buy it, even if it should succeed perfectly. There are a great many such inventions now lying dormant.

What is a Globule?—"N. O.," Omaha, Nebraska, asks what is the meaning of the prescriptions in "Herbert's Hints to Horsekeepers," in which "drops, or globules," are ordered to be given of certain substances, such as worm-seed. How can he get drops, or globules, of a seed or powder? The remedies given in that work are "homœopathic," and the terms given are such as are used by practitioners of that name. Persons who do not desire to follow the homœopathic methods, or who are unacquainted with them, had better use another guide than Herbert. McClure's method of treating horses, cattle, and sheep is a useful hand-book.

The Northern Pacific Railroad.—We learn that on June 4th the track of the Northern Pacific Railroad reached the Missouri River at Bismarck, Dakota, and the entire division of 450 miles from Duluth to Bismarck is open to business. Connection is made here with the navigation of the upper and lower Missouri. A line of steamers is established between this point and Fort Benton, in Western Montana, and shipments of both government and private freight are being made by this new route to the North-west. The railroad surveying expedition, with a military escort under command of General Stanley, was to start west June 16th, with the intention of making a final and definite location of the line of the road from the crossing of the Missouri to the crossing of the Yellowstone, and along that river to Central Montana, this being the only portion of the route not yet determined.

The Value of the Agriculturist.—Mr. R. R. Asbury, of the Alabama Institution for the Deaf, Dumb, and Blind, writing to Ogden Farm, says; "It may be some gratification to you to know how much I feel indebted to you for the Ogden Farm papers. In them my attention was first directed to the Jerseys, and I soon became convinced that they were the cattle for the scant pastures of this country. Favorable circumstances enabled me to buy three from Mr. Cary, and afterwards I got a bull of his raising. Now, I have got back all the money I had paid out, and $127 besides, and have on hand five full bloods, two of them imported. I have benefitted at least $1,200 by your papers in the past four years."

Believes in Soiling.—"J. B. T." writes from South Amboy, N. J.: "I have been much interested in the soiling articles. I am so pleased with my own experiment, I can not refrain from sending sample of common clover cut this 26th of May—thirty-three and a half inches to the head. This, considering late spring, is good at this date. I am soiling seventeen cows. Am much pleased with the system. I feed corn-meal, 100 lbs. mixed with 50 lbs. of bran, made in a slop, six hours before feeding. In hot weather this gets sour."

Grafting.—"F. L. E.," Hawley, Mass., wishes to know if plum, pear, and cherry scions will grow if grafted into an apple-tree.—The plum and cherry are too unlike to be grafted upon the apple. The pear, however, being more nearly related, will form a union with the apple stock, but this kind of grafting has not been found profitable or reliable.

Pickles, Again.—Every summer brings us a series of inquiries in regard to the making of pickles such as are sold in bottles. The pickling and preserving business is a regular trade, as is that of the confectioner or baker, and has to be learned. It is also a business that can not be started successfully upon a small scale, as one in doing so would have to compete with immense factories that employ many skilled hands and take the produce of a hundred farms. As to the frequent question as to the kind of vinegar used in the bottled pickles—it is whisky vinegar, though commonly called "white wine." Being free from the coloring matter of the cider, pickles put up in this vinegar are more pleasing to the eye, but no better, nor even so good, to the taste than those preserved in cider vinegar. Those who live where they can not readily send their cucumbers to a pickle factory should grow some other crop. Pickle cultivation is profitable only where there is a near market.

To the Boys and Girls.

THE MENAGERIE PRIZES.

I have finished reading your essays for the menagerie prizes, and no small job has it been. I wonder if it is possible to state a thing so plainly that some one will not misunderstand it. I stated "each article must give full name and age," yet here are some articles with initials only, and some with initials for the first name. If one writes J. Smith, how am I to know whether it is intended for Jane or James Smith?

Then I said as plainly as could be: "There are fifteen of these words, and these form the subject of the prize. The prizes will be given—five to boys and five to girls—for the best articles written upon these words." Then I enumerated the words. It seems difficult to understand how any one after this could write an article upon one, two, or four of these words, as some did. Another time I will try if it is not possible to state the conditions in such a way that it will be impossible for any one to misapprehend if they try to.

There have been two quite curious mistakes fallen into by both boys and girls. Word No. 6 was *Locomotive appendages*. Of course, these words in the prize announcement had reference to their use in the menagerie article from which they were taken. Yet, to my astonishment, several named the parts to a *locomotive engine* (!), and one put down a horse as a locomotive appendage to a canal-boat. Then several showed a queer misapprehension of the 9th question, "*San Diego to Monterey*—upon what ocean did I sail, and in what direction?" Some took me down the coast of Mexico, and gave me a land route across from Mazatlan or Acapulco to Monterey in Nuevo Leon, Eastern Mexico; while others kindly sent me round Cape Horn and across the Caribbean Sea and Gulf of Mexico, where they left me, there being no steamboat communication with this Monterey. It is strange that those who knew about Monterey in Mexico should not know about the more important seaport of that name in the United States.

With the exception of these queer blunders, the answers sent have been remarkably good. Indeed, I do not think I have had in any prize competition so much difficulty in selecting the best. There is one unpleasant thing in the awarding of prizes—that is, the feeling that I must leave out those who have worked just as hard as those to whom they are awarded. I have, with the permission of the publishers, increased the number of prizes, for both boys and girls, from the five offered to eight, and this does not take in all that I would like to include. Those who are not successful will have a chance to try again at some other competition.

I am very glad to notice how many of the boys and girls wrote that they should be amply repaid for their labor by the information they had gained in working up their articles. That is the right view to take of it. This has been a very useful exercise, and I hope to give you more quite as instructive. THE DOCTOR.

BOYS' PRIZES.

The First Prize of a Dictionary to Geo. A. Bentley, Eyota, Mich. The other prizes, books, to G. Alfred Tyzzer, Wakefield, Mass.; E. V. Aldridge, Daggett's Mills, Pa.; J. Edward Bangs, New Rutland, Ill.; Wm. Henry Doel, Jr., Chester, Ont.; A. M. Knowlton, Westboro, Mass.; Chas. K. Swartz, Williamsport, Pa.; Edmund C. Hill, Allentown, Pa.

GIRLS' PRIZES.

First Prize of a Dictionary to Nellie B. Nest, Washington Heights, N. Y. Prizes of books to Matty Barry, Barryville, Iowa; Lena S. Goodwin, Greenwich, N. J.; Amy V. Wright, Springfield, Mo.; Mary A. E. Walsh, Jerusalem Mills P. O., Md.; Mattie B. Rucker, Wapella, Ill.; Grace D. Percival, Savannah, O.; Mattie Muncey, Bristol, Pa.

Please Notice.—Those who are entitled to prizes other than Dictionaries will be allowed to select any book in the regular trade that retails for two dollars or less. They will please indicate their choice before July 10th. To those who fail to make known their requests The Doctor will send such books as he thinks suitable.

Bee Notes.—Advice to Beginners.

BY M. QUINBY.

Had I known that the early yield of honey would be as extensive as it has been, I should have said more of the Extractor in the June number. Very many stocks, in consequence of cold, became largely reduced in numbers, and had not maturing brood to replace the old bees that are continually dying off. Stocks of very moderate strength accumulated honey very fast, and filled the cells that should be occupied with brood as soon as there were bees to keep it warm. When the honey obtained is just about what the bees would use in nursing the brood, the queen is not limited for room to deposit eggs as fast as it can be protected. Hives that now (June 1st) have honey already sufficient for winter, and consequently a small place for rearing brood, will be apt to remain nearly stationary throughout the summer. We have recently discovered a remedy for this state of things. We can easily comprehend that if these brood-combs can be emptied of their honey and returned to the bees, they will refill them with more brood as well as honey. The bees will accumulate until there are enough to work in boxes. But with the old box-hive we can not work in this way. With most movable hives with combs there is no difficulty. Some time in the middle of the day, when the bees are engaged, open the hive and lift out a comb from the outside; hold it over the other combs, and give it two or three vertical and sudden shakes or jerks, which will dislodge most of the bees. With the feather end of a goose or turkey-quill, or something similar, brush off the remainder. Then, with a sharp knife—we have them made crooked for the purpose, with both edges sharp—cut off all the sealed cells, and put the frame in the extractor. Four are usually taken at once.

Extractors are made of different sizes, according to the dimensions of the comb. But, as the largest will empty the smallest combs, and the small sizes will not empty the large ones, it is best to get a machine adapted to all. The *principle* of all is the same. The honey is thrown out by centrifugal force. I will endeavor to describe the one I consider the best adapted. A can, made of heavy tin, two feet diameter, the same in depth, will be about right. This catches and holds the honey as it is thrown out. A frame is made for the inside—iron is better than wood. Let the pieces be 23 inches long, and cross each

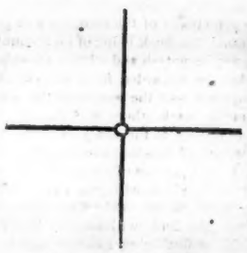


Fig. 1.—CROSS-BARS.

other in the middle, with a hole through the center, as in fig. 1. One frame is required for the bottom, and one for the top. Connect with a wooden strip on each outer end, and you have a frame like that in fig. 2. The bottom cross-piece has additional pieces to help steady the comb. Tinned wire-cloth, ¼-inch mesh, 18 or 20 inches wide, is put around the outside and held by nails. Through the center is put a half-inch round iron rod on which it revolves; it can be keyed fast if it is wished to have the rod turn. The bottom end can be secured by a small wooden bar across the bottom. The top end in the same way, with the bar above the top. On the upper side of the upper cross-frame are means attached to give the rotary motion, if geared to increase the motion. We have it geared like the old fanning-mill, with cog-wheel. Others use a strap and small pulley to increase the motion. Others still have no gearing, and get only one turn of the cylinder to one of the arm, which makes faster turning necessary. There are several minor points about it that will suggest themselves to a man of ordinary ingenuity: viz., a hole through the bottom of the can to draw off the honey; legs under the bottom; a crank at the top to turn it with; how to fasten the small wheel to the cross-piece, fastening the crank on, etc.

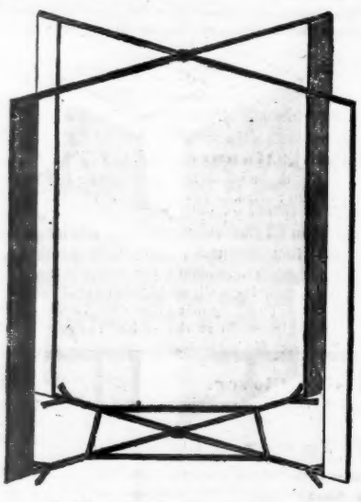


Fig. 2.—FRAME OF EXTRACTOR.

When all is ready, set in the combs, and lean them against the inside of the wire cloth. Turn it just fast enough to throw out the honey. A little experience will soon decide that. Then reverse the comb and empty the other side, when it can be returned to the hive. If there should be unsealed brood in the combs, and any is thrown out, it indicates that you have turned too fast. The warmer the weather, the slower the turning should be. No bee-bread or pollen is thrown out in any case, and the honey thus obtained is as pure as the purest box-honey. It has been sent to market in fruit-jars or cans, pints, quarts, half-gallons, small tin cans of 10 and 20 lbs., firkins of 40 and 75 lbs., and barrels of 4 and 500 lbs. The best way is yet undecided. If kept in wooden vessels for the summer, they should be of a kind that would impart no unpleasant flavor. It should be kept in a dry atmosphere; and could the vessel be full, and sealed

perfectly tight, it might not become candied. If every one sending this honey to market would seal it, and send an affidavit that it was not adulterated in any way, it would do much towards its reputation for pure honey. Its remarkable whiteness often makes buyers doubtful.

The boxes in the hive described last month can be examined at any time by just moving the sides, and not allowing a bee to fly. Do not wait for every cell to be sealed, as there will be a few scattered ones uncapped for a month. Take off all as soon as the general smooth surface of all the combs is sealed over. The quicker

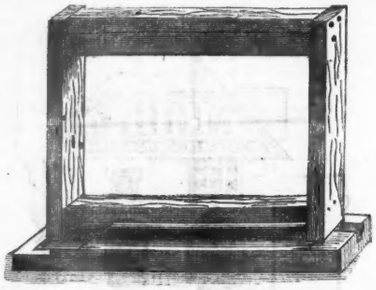


Fig. 3.—MANNER OF SECURING FRAMES.

ooxes are filled, the finer the combs appear. If left only a few days after being sealed, the bees will, by running over it, soil the pure, white surface. The honey, of course, is just as pure, but the yellow tinge added makes it just a little less attractive in market or on the table at home. If a full box that has been quickly filled is removed at once, and replaced by an empty one, a gain of one or more might be the result. If bees are getting honey at the time boxes are taken there is but little danger of robbing, and they may be set near the hive for the bees to leave them, allowing the young bees just hatched to creep to the entrance. Do not let the hot sun shine on the boxes at any time. The best time to market honey is usually October. To keep it through the hot weather, put it, 1st, where it is dry; 2d, dark; 3d, cool; 4th, where it will not be stolen.

The methods of queen-rearing will have to be deferred until another month.

[The materials for illustrating the hive described last month did not reach us in time for the engravings to ac-

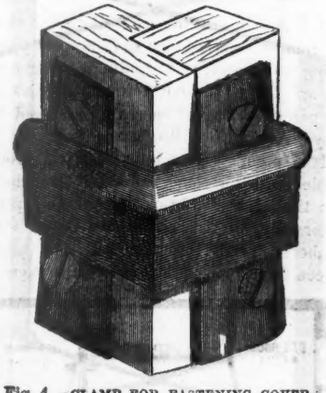


Fig. 4.—CLAMP FOR FASTENING COVER.

company the article; we give them here: Figure 3 shows the manner in which the frames are held in an upright position by means of a bent piece of hoop-iron attached to the lower part of one end of each frame; this hooks into a flat piece of similar iron fastened to the bottom board. This engraving is much out of proportion, it having been drawn from a small model made of parts of the usual size. Its object is solely to show the manner of supporting the frames. The clasp or clamp for fastening together the side of the cover of the hive is shown in fig. 4. This is a simple and efficient unpatented invention of Mr. Quinby's, and we presume he furnishes them on application.—ED.]

Ogden Farm Papers.—No. 41.

We receive ample evidence that the Jersey cow is well adapted to the Southern soil and climate. Mr. J. H. Freeman, of Jackson, Tenn., recently wrote: "After three days' experiment with 'Belle of Ogden Farm' as a milker, I give you the following result:

May 10.—Morning, 16 lbs.; evening, 13 lbs.=29 lbs.
May 11.—Morning, 15 lbs.; evening, 13½ lbs.=28½ lbs.
May 12.—Morning, 15½ lbs.; evening, 13½ lbs.=29 lbs.

Total in three days.....86½ lbs.
(About fourteen quarts per day.)

The calf was in each instance allowed to take what it wanted. I would state, however, that the calf, while hearty and vigorous, does not seem to take as much milk as other calves of same age. I hope you may have a dozen heifers as good milkers as this one, but can't say I am sorry you sold her. No amount of money can tempt me to sell her."

"Belle of Ogden Farm" was dropped January 19th, 1871, and was consequently less than 28 months old when this experiment was made. The calf (her first one) was dropped April 15th, 1873, and was twenty-six days old when the experiment in question was made.

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A correspondent writes: "I see that you have renewed your complaints of abortion among your cows. By your writings, it seems you feed steamed corn-fodder. If you trace the matter up, I think you will find that the abortions are produced by the fungus growth (smut) on the corn-fodder. Experience has taught me that all fungus growth on vegetables—ergot of rye taking the lead—are productive of abortion in animals. *Fungus, high feeding, a great tension of the milking secretions, are all existing causes to abortion. I have known abortions to be produced in mares by the fungus on oat-straw.* The large-growing corn is more apt to have fungus than the kinds that produce a smaller stalk, and high manuring produces it also. This is one of the things to be overcome in high manuring and in forced vegetable growth. The greater the overgrowth of the plant the more liable to disease. The only remedy I can suggest about fungus in corn-fodder is to go through the field before cutting, and select the stalks that have fungus and cut them down. Whether wetting or soaking feed with fungus dust on it will destroy it or not, I can not say, but, chemically speaking, I think its effects are unchanged by the wetting or steaming process. Hoping this may be of some benefit to you, and the means of preventing abortions among animals belonging to others, I remain," etc., etc. "P. S.—I have known clubbing cows on the back with a club to produce abortion. I always keep a leather whip or two about the stables. From what I can learn, fungus produces nausea and contracts the uterus. I suppose there is something among the drugs (perhaps whisky) that would antidote the effect of fungus."

There! This is a copy of a well-meant letter, from a man who knows a good deal more about some things than he will when he shall have extended his sources of knowledge by further study and observation. I am glad to have received it, and congratulate him on having written it. It is a step in the path of speculation and investigation that can not fail to lead to good results if faithfully continued. All such efforts help to make farmers more intelligent and more useful. At the same time, it is only a step, and the path is beset with difficulties that are not now foreseen. The causes of abortion in cows lie in the distant horizon, and no one has yet gone far enough to find them. Examining this letter in the light of my own experience, I find: (1) That only a small percentage of our cows have aborted while on corn-fodder. (2) Not nearly all of them have aborted on steamed fodder. (3) The first case we ever had was in a stable where only long hay (and of good quality) was fed. (4) Quite a number were young heifers with their first calves, and there had never been the least stimulation of the lacteal secretion—had been no lacteal secretion at all. (5) We have had at least as many cases where we have fed very moderately as where we have fed abundantly. (6) Small-growing corn produces often more fungus than that of ranker growth. (7) It is at least "not proven" that high manuring (which is necessary to a vigorous growth of corn) is conducive to the production of fungus.

And these seven findings show that my correspondent is further from a solution of the question than he fancies. Whether corn-smut has the effect he suggests I do not know. It is *established* that the ergot of rye conduces to abortion in the human subject. It is *inferred* (and with much plausibility) that it has the same effect on the cow. Beyond this, so far as I have been able to learn, we can make no positive assertion. I have never known of a case of nausea in a cow, and do not know what its effects would be. I did not suppose them to be subject to any "retching" that could produce a contraction of the uterus. If corn-smut has the same effect as ergot, surely its treatment for some hours with live steam ought to destroy it. At all events, this process is not to be classed with any mere wetting. The suggestion about clubbing cows over the back does not apply to any case within my knowledge. I would as soon think of shooting a cow, and done with it. Neither do I think that a "leather whip" is a proper article of furniture for a cow-stable. Under no circumstances should a cow or a heifer be touched or even threatened with a whip, or in any other way abused or frightened. I have had occasional abortions traceable to injuries received from other cows, but this is very different from and much less serious than those causes about the origin of which, as Lord Dundreary says, "no fellow can find out"—those mysterious and apparently contagious abortions among a herd of cows kept under precisely the same conditions that have for years before maintained a perfect state of health.

The New York State Agricultural Society has made a very strenuous effort to learn something about this matter of abortion, and employed a very competent committee to examine into the subject. Their investigations extended through the years 1867, '68, and '69, and covered every conceivable class of causes which might directly or indirectly produce the disease. The result of all their labors is practically *nil*. They were unable to form any theory which could be made to account for the facts that came under their notice. Conditions which attended frequent abortion in one case were equally marked in others where there was no abortion at all. Even ergot, which seemed a probable cause, was not convicted of guilt. Dr. Carmalt (the Commissioner of 1869) says in the appendix of his report: "Your Commissioner has been unable, after a careful examination, to establish any constant relation between the amount of ergot and the frequency of abortion, but the latter occurs irrespective of the amount of ergot in the grasses constituting the hay."

The subject is of the utmost importance, and can not be too carefully studied by all who have the care of cows—but the investigations concerning it have been carried much too far for it to receive material help from individual farmers who jump at conclusions which have long ago been proved fallacious. We know much less of abortion than we do of the potato-rot, and we

are at least as far from a remedy. The most valuable suggestion about it that can now be made is that the most watchful care should be exercised not to allow a cow to abort in the presence, nor within sight, smell, or hearing of other pregnant animals, and to keep her isolated for at least two weeks afterward. There is always some indication about the udder and vulva of the approaching trouble.

In the above, I trust that there is no sugges-

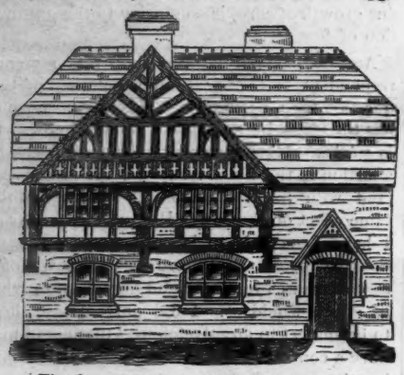


Fig. 1.—FRONT ELEVATION OF COTTAGE.

tion of anything but pleasure in the receipt of the letter referred to. All such letters are especially welcome. I reply as I do to this one only because I know that the operations of many natural causes with which we have to deal in our occupation as farmers are more hidden than many suppose, and have already received more critical investigation—thus far without practical result. Happily, the trouble is leaving us. We have had no repetition of abortion in the same animal, and several which aborted last year have carried their calves to the full period. Our greatest loss arises from the fact that we can not offer for sale for a year or two cows which have played us this trick. The flow of milk has in each case risen to the usual quantity.

I am now trying an *experiment*—one in the issue of which many beside myself will be much interested, because it relates to the very vital question of labor. Having a multiplicity of occupations, not all at Newport, I necessarily do my farming "at arm's length," and the arm

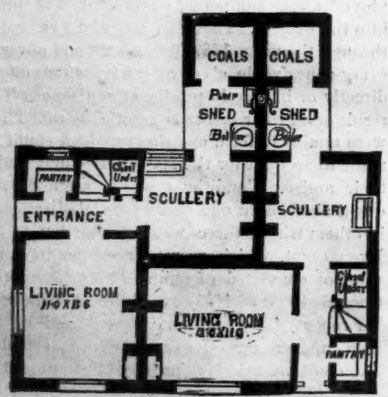


Fig. 3.—PLAN OF GROUND FLOOR.

is sometimes very much elongated indeed. All farmers know that what, in these days of big pay and short hours, is called "a fair day's work" will not answer our purpose. We want more steam—more *personal interest in the work.* At least, those who are in responsible positions must be stimulated to *drive things.* It has been already stated that we changed foremen this spring. The new man and his wife are young, strong, active, and intelligent, and began very well indeed. It was of the utmost consequence to keep them good, and to counteract the natural tendency of all hired help in America to fall into the indolent and slip-shod ways which are the bane of the whole labor question. Hindrek—whom even five years of American farm-life have been powerless to contaminate—had earned a reward of merit, and might have in him still more energy which personal interest would develop.

The experiment consists in an application of the principle which alone serves to promise a fair solution of the whole labor question—the principle of *co-operation.* The great difficulty lay in the method of application. It is easy enough in manufactures and in trade to decide what shall be a fair basis on which to divide profits between capital and superintendence on the one hand and labor on the other. I have even been able to make a satisfactory adjustment of the matter in the case of my market-garden and greenhouses, where "co-operation" has worked very satisfactorily for two years past. But it is not easy in farming, where the capital is large in proportion to the assured income, and where the risks are great; where the element of "luck" has more to do with the profit-and-loss account than in any other occupation; and where the improvement or depreciation of the value of the land can not be estimated. In the case of Ogden Farm the difficulty is still greater because of the high value of the thorough-bred stock, which is entirely independent of the services of the hands.

The basis finally decided upon was the following: Wages, household expenses, forage of all kinds, and the repair of tools, etc., etc., are more or less under the control of the immediate manager of the farm Hired pasture and purchased manure tend directly to increase of forage or other crops. Consequently, these items are to be reckoned by themselves, on the debit side of the account. On the other, we put all sales of butter, poultry, swine, and produce of all kinds, and make an allowance of so much a month for the keep of all calves, young stock, and cows not in profit. Whatever profit this account shows at the end of the year (up to a certain figure) is to belong equally to the manager, his wife, and Hindrek. I think the basis is a fair one, and it is of a sort that almost any farmer may adopt. I do not give the figures on which the arrangement is established, because it is not necessary to the illustration, and would hardly be a guide in other cases; also because the influence of any example may as well be exerted without the unnecessary exposure of one's personal affairs. It is enough to say that the sum named as the share of the three persons is a large one, and that I expect to have to pay them the full amount. They were "satisfied" with their wages, and they would have been glad of a much smaller share of profits than I have set apart for them; but the purpose was to make the success of our operations in every detail so important to them that they would have the same effective interest in them as though they owned the farm. This a small sum would not have done.

The effect on the movement and "go" of the whole farm is very much as though I had connected it with a large galvanic battery. My part has become very much that of a spectator, and I need no longer scold, and nag, and coax, and wheedle. The work goes as it never went before—and it will keep going. The clamor for another servant in the house, and another man in the field, has entirely ceased. My "how goes it?" is now answered by "ganz wohl" (first-rate)—it used to be "ziemlich" (so so). I am now told with delight that 86 lbs. of butter were made at the semi-weekly churning; it used to be with a sad prospect of 100 prints to make that the woman saw 50 lbs. come from the churn. In fact, to make a long story short, it makes all the difference between

Fig. 2.—SIDE ELEVATION OF COTTAGE.

a pleasure and a pain in the management of the farm, and I am quietly chuckling over the conviction that in straining for their bonus, these worthy people are quietly putting twice its amount into our own pockets of money that comes solely from their extra exertions, and which under the old system we never should have seen; so much clear profit on this little speculation, the foundation of which is—*to give the laborer a share of the proceeds of his work and his vigilance* aside from his regular wages.

A Neat Farm-Laborer's Cottage.

The demand for houses for laboring men and for small farmers, which shall be pretty without being too costly, is a rapidly growing one, and we are glad to present herewith the designs for "a pair of cottages" recently published by the Royal Agricultural Society of England.

It is intended to be built of brick, except the gables, which are "corbelled out 16 inches; and the timber walls, brick-nogged and plastered externally, are only six inches thick"—that is, timbers are built into the wall, the spaces between them being filled in with broken bricks

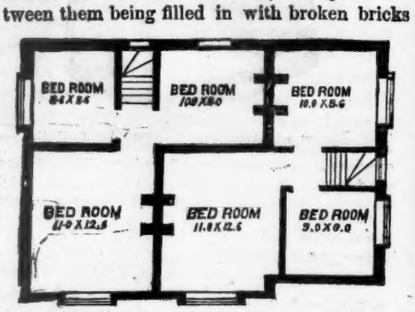


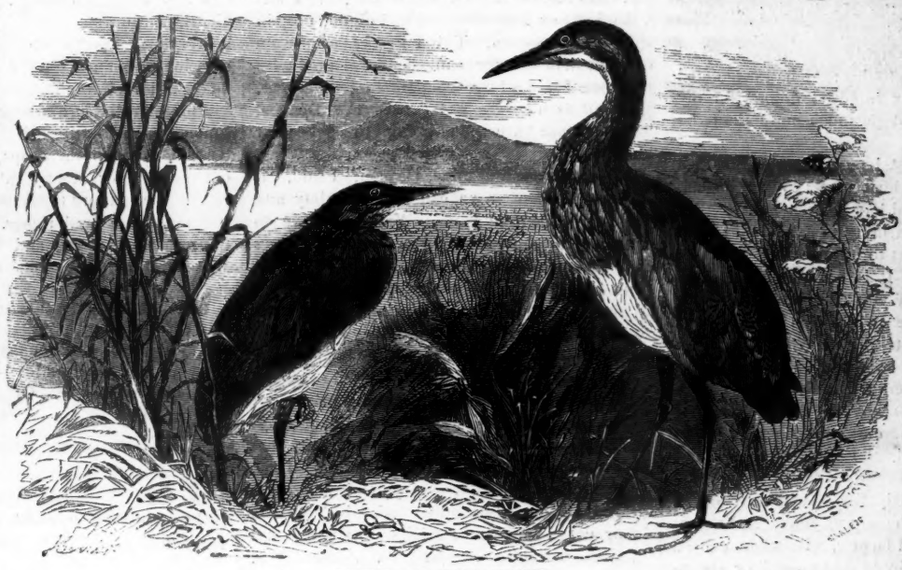
Fig. 4.—PLAN OF SECOND STORY.

and plastered over so as to have the wood exposed to view. The partition between the two houses should be built of brick (eight inches) so as to separate their sounds.

By altering the interior arrangement, this would make a charming home for a farmer's family, or an attractive suburban cottage. The style could be more cheaply imitated in wood, but brick or stone (well clad with vines) would be much more picturesque. The plans of the arrangement of the first and second stories being lettered need no further explanation.

The Bittern or Stake-driver.

Birds of the Heron family are quite sure to attract popular attention on account of their large size and their striking form. Their long legs are formed for wading, and their long and hard bills indicate that they are adapted to catch living prey. The plumage of some is noticeable and valued for its beauty. Our commonest representative of this family is the Bittern or Stake-driver—*Botaurus lentiginosus* of the ornithologists — which is found all over North America. The length of this bird is 26½ inches; its bill is 2¾ inches long. Its general color is a brownish yellow, which is mottled with dark brown and brownish red; upon each side of the neck there is a broad black stripe which starts behind the ear. This is less nocturnal in its habits than most others of the Heron family, and is therefore more frequently seen. It is especially common in the northern New England States, arriving from the South in March and April, and remaining until October. Its food is fishes, frogs, and probably small mammals, and insects, which it pursues with great industry. Like others of its family, it is social during the breeding season, but solitary at other times. A dozen or more pairs will build their nests within a small area. Their nests are built of twigs, leaves, and grass, and are placed on low bushes or on thick tufts of grass. The eggs are usually four, of a rich drab color. This bird gets the name of Stake-driver from the peculiar note of the male at the breeding season, which is so like the sound made by driving a stake with a mallet, that persons have been deceived by it, and in endeavoring to find the workman have been led into the swampy haunt of the birds. One author renders the note of the bird as *chunk-a-lunk-chunk, quank-chunk-a-lunk-chunk.* The young birds are able to take care of themselves in August, when the colony breaks up. Audubon seems to have known but little about this very common bird, as in all his experience he never found a nest. He says that the bird is extremely timid, and that upon several occasions he has come upon them suddenly, and they were so frightened that he could knock them down with an oar. When wounded, they show fight, especially if a dog is present, and with their large bill they are capable of inflicting severe wounds, and prove themselves no insignificant antagonists when attacked.



BITTERN OR STAKE-DRIVER.

The Red-wing Blackbird.

It is a pity that so handsome a bird as the Red-wing or Swamp Blackbird should have a bad character. When the farmer counts up his feathered friends this bird is not among them. He has reason to regard this bird as his enemy when he is obliged with "force and arms" to drive it away from his grain-fields. The male is a very showy bird; its plumage is a shining velvet black, with a greenish reflection, and its shoulders are of a bright vermilion red. The female wears a less showy dress, the prevailing colors being brown and brownish yellow, with white on the under parts. This bird makes its appearance at the north in March, and nest-building commences in May. The nest is upon low bushes growing in or overhanging the water, or in a tussock of sedge; it is built of coarse grasses and leaves, and lined with finer grasses. The eggs are four to six, light blue, mottled with brown. Usually there are two broods in a season, and when the last brood has left the nest the various families join and form large flocks of one to two hundred. This is the time of tribulation to the farmer, as the birds give his grain-fields no quarter. It is said that localities near the sea-coast are more infested by them than far inland, and that flocks containing a thousand birds are not rare. Of course, the farmer has, in self-defense, to use powder and shot to defend his crops, and by the time the birds start southward, in October, their numbers are materially diminished. Some set poison to destroy the birds, but this is not to be commended.

RED-WING OR SWAMP BLACKBIRD.

IMPREGNATION OF EGGS.—"M. K. W.," Marietta, Ohio. The process of the impregnation of eggs is one that we know but little about, and one on which intelligent farmers can do much to enlighten themselves and others by close and accurate observation. It is generally supposed that hens' eggs require each a distinct impregnation. It is known that turkeys' eggs require but one impregnation to fertilize the whole contents of the ovary for one season. It is therefore unnecessary for a farmer to keep a turkey-cock if he can procure its services on one single occasion. In England, turkey-cocks are loaned or hired in this way regularly. Professor Agassiz recently mentioned in one of his lectures that it had been stated that a turkey hen which lost her nest of eggs would lay another setting which would be fertile without the repeated presence of the male turkey, but that he could not vouch for it; if true, it was an interesting fact which he would desire to have determined. Any well authenticated cases of such an occurrence within the experience of any of our readers would be received by us with thanks.

Walks and Talks on the Farm.—No. 115.

Last year the wheat crop of Western New York was the poorest we have had since I have been on this farm; and this year it is worse than it was last year. That which was sown early is badly injured by the Hessian-fly; and that which was sown late is thin and poor.

Farmers are thoroughly discouraged. Said one of my neighbors to-day: "I had calculated on getting five or six hundred dollars for my wheat, but I shall not get much more than the seed."

"You farmers must be getting rich," said a city friend, "with wheat at $2.25 per bushel, potatoes at $1.15, and hay $32 per ton."

"Yes," I said, "farming is a splendid business. Don't you want to buy a farm? Farming is not a monopoly. It is not patented. This is a free country. If you think we are getting rich you will find plenty of farms for sale."

But to be serious, taking the city view of the matter, farmers, in this section at any rate, ought to be doing better than they are. There are two main reasons why we are not making money. First, the extreme fluctuation in prices; and second, the low average crops per acre.

There is no remedy for the fluctuation in prices. It depends on causes beyond the control of an individual farmer. It is not caused to any great extent by "middlemen," or speculators, or railroad monopolies. It depends on the great law of supply and demand. All that these men can do is to aggravate the evil. By refusing to buy when the supply is large they may depress prices to a point far below the cost of production; and by refusing to sell when there is a scarcity they may force an article up to an exorbitant rate. But this is all that they can do. Instead of wasting our energies in trying to remedy this evil, it is better to accept the fact that it has always existed and always will exist, and act accordingly. The real remedy is for a farmer to adopt a fixed and definite system of management, and stick to it. At this time last year potatoes were not worth here 25 cents a bushel, now they are worth over a dollar a bushel. Taking one year with another, the crop, in favorable localities, can be made profitable. Make up your mind about how many acres it is best to plant on your farm, and plant no more nor no less, no matter what the price may be. And so with wheat, barley, corn, oats, and other crops. And the same is true in regard to raising pork, mutton, wool, beef, butter, cheese, etc. Adopt a system, and stick to it. These articles will always be wanted, and will bring prices, in the long run, in proportion to the time, labor, skill, capital, and intelligence required to produce them.

The other reason why farmers are getting such inadequate compensation for their labor is the low average yield per acre. The remedy for this is, to a considerable extent, under our control. We must farm better. It is the large area of land under cultivation and the low average yield per acre that is the chief cause of all our troubles. A favorable season floods the markets with produce which can hardly be given away; an unfavorable season causes high prices, but we have nothing to sell. A good farmer would have a fair crop even in an unfavorable season. If I had been a good farmer I should have had 200 bushels of potatoes per acre; but as it was, I had not a hundred bushels per acre—and many of these were too small to sell. For the good potatoes I got $1.06 per bushel, and if I had had 200 bushels per acre, and ten or a dozen acres, I should have had no reason to complain of hard times. As it is, I say, "The weather was so dry that my potato crop was a failure." But, in point of fact, I know that this is not the exact truth. I had a bad crop because I am a bad farmer. If I was a good farmer I should have had a good crop in spite of the drouth. This I know, because on one row manured for mangels, but planted with potatoes, I had a large yield of large potatoes.

"That is all very well," says the Deacon, "but where are you going to get your manure?"

"In your case and mine, Deacon," I said, "it is doubtful whether we can afford to buy any fertilizer except gypsum. We shall have to make our own manures. We must make *more* manure and of better quality. To do this, we must either buy more grain, bran, oilcake, etc., to feed to our stock, or we must *raise* more food to feed out on the farm. The better plan is to do both. We must drain our land—"

"Draining is all very well," says the Deacon, "but what has it to do with making manure?"

The Deacon plays shy of the drainage question. He has a quantity of low, rich land that is so wet that it could not be plowed until June. I wanted to tell him that if that land was drained it could be cultivated with half the labor, could be sown in good season, and would produce more than *double* what it does now, and consequently enable the Deacon to produce double the amount of manure. Draining, better tillage, and irrigation are the means we must look to for growing larger crops and making more manure. We have to get the manure out of the soil, and when we have got it we must be careful not to waste it.

I sent half a bushel of Diehl wheat last fall to E. F. Jackson, of Des Moines Co., Iowa. He writes me that it does not seem to be as hardy as their own wheat. "The seed," he says, "was the nicest I ever saw. It came up well, and I covered the land with stable manure and still it froze out." The truth is, that choice wheat, like choice stock, is not as hardy as inferior kinds. Mr. J. says that nearly all their wheat is winter-killed "except a little now and then on a hill-side sloping south, or well protected with timber." On the other hand, Mr. F. K. Adams, of Wisconsin, writes that his winter wheat is all killed except a small patch "facing the north." I apprehend that it depends more on draining and on the fertility and condition of the land and on the period of sowing than on the exposure. We must aim to get the plants strong and vigorous before winter sets in. I do not mean that we must sow early. This may or may not be desirable. But the real point is to get the land free from stagnant water, and at the same time have it rich enough and moist enough and mellow enough to give the plants a good start.

We talk about raising "wheat enough for the world," but our own population is increasing so rapidly that the time will soon come when it will tax our skill to raise wheat enough for ourselves. We shall do it, of course, but we shall have to farm better than many of us do now. And he is the wise man who is getting his land cleaner and richer.

M. A. B., of Illinois, says he would like to know "if plaster is a manure?" Certainly it is. Anything that will increase the growth of a crop is manure. Tillage is manure. "We have used plaster here in Illinois," he says, "on young corn, and could not tell where we put it; while in the State of New York, when I used to put plaster on corn I could tell to a row by the color of the plants where the plaster was used." On black, rich, moist soil plaster rarely has any beneficial effect. "Would a field," Mr. B. continues, "which had plaster sown on it every year, and the crop all removed, hold its own longer than if plaster was not sown? or, does plaster simply make the plant-food of the soil more available, and must we put on manure to keep up the fertility?" That is it. If plaster will increase the crops, use it. Then feed out the crop, or at any rate the increase, and return the manure to the soil. Plaster so used will make the land richer. But to use plaster to grow larger crops, and then sell the crops, will make the land, sooner or later, poorer.

A young farmer wants to know the relative nutritive value of hay, straw, and corn. It depends so much on circumstances—on the kind of stock and on digestion—that I can give no satisfactory answer. Of nitrogenous matter and available carbonaceous matter:

	Nitrogenous Matter.	*Available Carbonaceous Matter.*
100 lbs. meadow-hay contains.	8¼ lbs.	46¼ lbs.
100 lbs. wheat-straw contains.	2 "	34 "
100 lbs. clover-hay contains...	13½ "	38 "
100 lbs. Indian-corn contains.	10 "	85½ "

My young friend can figure out how much corn he would have to add to a mixture of clover-hay and straw to make the feed equal to meadow-hay, bearing in mind, however, that our animals, as a rule, object to being fed on chemical principles unless you mix plenty of grain with them. The chemists are correct enough, but they do not sufficiently consider the question of digestion. For my part, I am satisfied that we can feed our animals in this section cheaper on clover-hay, straw, and Indian-corn than on timothy-hay and oats.

This spring we were feeding the farm horses chaffed clover-hay and corn-meal, moistening the hay and mixing the meal with it. We got out of clover-chaff, and it was over two weeks before we could conveniently cut any more, and so we fed long timothy-hay with corn-meal and bran. The horses manifestly did not do as well on this as on the chaffed clover. This was so obvious, that we gave them oats instead of meal, but even then they did not do as well as on the clover and corn-meal. So far this is strictly in accordance with chemical principles. I suppose horses driven at great speed on the road would do better with oats and timothy, but for the slow work of the farm the clover and corn-meal are better—and certainly far cheaper.

I told you, I believe, that the Deacon has adopted one of my ideas. He is feeding his cows a couple of quarts of corn-meal per day while at grass. The effect he says is wonderful. I have strong hopes of the Deacon yet. I tell him he will adopt another of my crotchets—that of mixing say half a pint of corn-meal in a pail of water for the horses when they come home from work at noon; but he shakes his head, and is expecting soon to hear that I have lost a horse or two from colic.

Dr. Stiles, of Texas, asks me some questions in regard to the management of thorough-bred pigs. "My young thorough-bred Essex pigs," he writes, "are two months old. Is it time to wean them? I have fed them myself, three times a day, since they were three weeks old,

on corn-pudding and milk or dish-water. There are four of them, and I fill a two-quart bucket with the mixture for each meal. After greedily eating up this, they finish off with shelled raw corn from one ear, which they like to crack. They are as fat as it seems possible for them to be, and full of fun and life. I have fed their mother always three times a day on cooked corn-meal and dish-water, finishing off with nearly a quart of shelled corn at every meal. She is as fat as she was before the pigs were born—I think fatter. Her bags are distended with milk a great part of the time, and if I take away her pigs will she not have fever? Must I reduce the food of either mother or young ones?" Yes. The young pigs will stand high feeding until four or five months old, but they should have plenty of exercise. I would stop giving the sow the shelled corn, and let her have nothing but slops. I would let the pigs suck as long as the sow will give plenty of milk. The Essex are so quiet, that after they have attained their growth they require very little food. I am now giving my breeding sows no grain of any kind—nothing but grass, with a feed of slops made of bran once a day. In the winter I give bran and a little corn-meal. In the spring, before grass comes, I feed more or less mangels. If I had enough, I would feed all my breeding sows a bushel of mangels each per day from the first of March until the middle of May. During the winter I would feed them about half a bushel of mangels per day and a little corn or bran.

The Scott Township Farmers' Club of Steuben Co., Ind., are disturbed in their minds by my statement that ammonia will not escape from a well-managed manure heap. They say the opposite doctrine has been taught by high agricultural authorities; "and now," they ask, "which statement have we to believe?" Examine the evidence, or, better still, test the matter by experiment. If ammonia was escaping from a fermenting manure-heap it could readily be detected by the nose, or by litmus paper, or by a rod dipped in muriatic acid. I want no controversy with any one on a matter of this kind; and it is certainly not for me to say what a man shall or shall not "believe." I have no sort of doubt that there are thousands of manure-heaps from which ammonia escapes; but this is simply because they are badly managed.

After considerable experience in the use of petroleum for painting implements, wagons, machines, etc., I am satisfied that it is a good thing. But it is necessary to use it freely. The great point is to saturate the wood. All the pores should be filled with petroleum. I painted a new pine wagon-box some time since with petroleum. I went over it half a dozen times in as many days, being especially careful to apply the oil at the ends of the boards and to hold the brush against them as long as they would absorb oil. You will understand what I mean if you have ever used petroleum in this way. It is astonishing how quickly the oil penetrates into the pores. By going over this wagon-box repeatedly, I succeeded in getting it to absorb over two gallons of oil. I am not afraid to have that box exposed to the rain and the sun and wind. Merely going over the wood once with the petroleum does comparatively little good, unless you propose to paint afterwards with ordinary oil paint. I would mix nothing with the petroleum. Saturate the wood with it, and that is all that is needed. Now is a good time to do it, while the wood is dry. The petroleum will take the place of the water.

Elder Roberts, who has recently been in Kansas, remarked to me to-day: "You have no idea how hard times are in the West. Why, a man will draw a load of corn many miles to market, and then not get more than $3 for it." No doubt this is all very true; and there is no remedy except not to sell the corn. Convert it into pork or beef. It must be a poor breed of pigs that with pork at $5 per 100 lbs. live-weight will not net 50 cents a bushel for the corn. It is not probable that we shall again for some years see pork as low as it has been for a year or two past. The low rates have introduced American pork into many new markets, and if we only take pains to furnish a choice article, there will be a demand for all the pork, hams, and lard we can produce. The Western farmers, like ourselves, may well feel discouraged, but there is no reason for despair. The prospects are brightening.

How to Start Manufactories in a Farming District.

The want of a market, which lies at the bottom of the farmers' fight with the railroads in Illinois, is a serious trouble in many parts of the East. The farmers who are near large cities and villages do well enough, but there are still large districts remote from railroads where there is little variety of labor, and the farmers have nobody to feed except the blacksmith, the shoemaker, the merchant, and two or three professional gentlemen. They have to drive from twelve to twenty miles to market every load of wood, every pound of animal or vegetable food that is sold from the farm. This is a very serious drawback to the profits of husbandry in such districts; so serious, that it discourages effort and sends multitudes to more favored regions. The farms are running down, the buildings are going to decay, and the price of land is even less than it was fifty years ago. In many cases the old homestead is a ruin, and the land sold for a song to the next neighbor. And this happens, too, in places where there is good water-power waiting to turn wheels, and abundance of wood and other raw material for manufactures. The best remedy for these unthrifty regions, in the East certainly, is the introduction of manufacturing industry. Some kinds of manufactures, no doubt, are best carried on in cities, notwithstanding high rents, costly steam-power, and expensive labor. But other kinds can be more profitably pursued in the country, where there is plenty of room, cheap raw material, and cheap food and labor. An agricultural town does not always see that it is much cheaper for them to create a home market in their midst than it is to carry all their products twenty miles to market. They would not positively make war upon a man who should propose to invest a hundred thousand dollars in manufacturing industry in their midst, but they would expect to get an extra price for the lands watered by the stream that was to furnish the power, and they would get all the taxes they could out of such an investment from the start, without any reference to the productiveness of the capital. A proposition in town-meeting to remit taxes to a manufacturing company for five or ten years as an inducement for them to start a new enterprise would be voted down by a large majority. Yet this kind of inducement is often the thing that determines the minds of men of large capital who are looking for new localities to start manufactories. The advantage of such a diversity of industry to the fortunes of farmers is not likely to be overestimated. The fruits of such investments are visible in all the southern portion of New England, and in many other places. The changes wrought by them, even within the memory of middle-aged persons, is wonderful. From the window where we write we look out upon a valley with a population of over four thousand, where but a few years ago there were hardly a dozen families all engaged in the cultivation of the soil. There was no home market. Grain was shipped to the distant city, and butter and cheese to the South. So small were the profits that not much was raised, and there was not much capital beside the land, the stock, and the buildings. The scene is much changed now, and it is all owing to the business enterprise of a few individuals who studied the natural resources of the valley and developed them. Every farm within ten miles of the village feels the effects of this large increase of wealth and population. There is not only a home market for everything the neighboring farms can produce, at remunerative prices, but supplies are drawn very largely from the West. The price of the farming lands has been doubled, and in many cases quadrupled. It has made a good many families prosperous by the rise in the price of lands, and the whole business of agriculture is elevated to a higher plane by the presence of this home market. It is in the power of almost any agricultural township in the more thickly settled portions of the country to vary its industry, and create a home market, by holding out special inducements for manufacturers to start new enterprises among them. The power and the raw material are there unused. Let the new industries be warmly welcomed.

Thatching Stacks.

There is no question but that a large portion of the cost of barns and sheds for storing hay and grain might be spared. The idea is current that barns are necessary to protect the gathered crops from damage by the weather, and that a large portion of them must necessarily be lost if stacked out. With the method of stacking in general use in the United States this idea is a correct one; but there is no reason why our method should not be so improved that a stack may be made perfectly weather-proof. In Great Britain, where the climate is very much moister than ours, and where during the fall and winter months it is almost constantly raining, the farmers as a rule stack their hay and grain; and it is not at all unusual to find stacks of grain two or three years old, which, when opened to be thrashed, are in a state of perfect preservation. If the English farmers can do this, and thus save the cost of expensive buildings, why should not we do it? We can if we will. We are very apt to think that unless a thing can be done in a very short time it will not pay to do it, and that any process that requires some extra time is unprofitable. But with the increased value of time, as compared with past years, we find an increase in the value of other things, and generally it will be found to pay to economize now, as formerly, not only in labor, but in other expenditures.

The old-fashioned system of thatching stacks

is not adapted to our present needs. That required a slow process, and one which must be performed at a season when work must be hurried, and was only possible where help was cheap and plentiful. That time has passed, not only here but in Europe; and we notice that the old system of thatching in use abroad has been greatly improved upon. Instead of taking the straw by handfuls and pegging it down upon the stack, or sewing it upon the roof, it is now placed in a machine and sewn into rolls of matting, which may be spread out on the top of a stack and made to cover it in a very short time. The mats may be prepared when work is not pressing, as during winter or in stormy weather when out-door work is not possible. But we can, if necessary, dispense with the machine—which is a sort of sewing-machine, working with two needles and shuttles, and turned by a crank by one man, another feeding the straw. The same work can be done, in a slower manner certainly, but equally as well, by hand. Let the straw be gathered into bundles and laid as regularly as possible. It should then be wetted, to prevent it from breaking in the handling. Handfuls are taken from the bundles and laid on a table, where two persons are engaged in the sewing. The stitch needed is what is called a back-stitch; that is, the stitches are made two inches long or more, which must depend on the condition of the straw, and each stitch is taken back and the needle passed through the straw a little behind where the thread of the previous stitch is seen. This stitch binds the straw firmly together, and it is rendered more durable if at each six or eight stitches a knot is made and drawn tight. The straw used should be rye if possible; barley or wheat will answer a good purpose, but the thatch will be narrower. As it is sewed together it is rolled up, and the rolls may be made of any desired length. At figure 1 is shown the mat. Figure 2 gives the needle used, which any blacksmith can make; and in figure 3 is shown the mode of making the stitch. Any sort of table or bench will answer the purpose, and the twine should be of tarred hemp. When the mats or rolls are prepared, they are used in the same manner as the rolls of prepared roofing of paper or other material. One is laid down on the stack projecting over sufficiently to throw the drip of water clear of the edge, and it is pinned down by wooden pins shaped like the one shown in figure 4. In covering a round stack, the man who works on the stack should have one end of a rope passed around his body, and a noose at the other end hitched on to the pole which passes up through the center of a stack, as in figure 5. He is perfectly secure then from falling or slipping, and can work much more rapidly than when in constant danger. The one who assists him follows him around, and hands up the pins and mats as they are wanted. When the thatch is all laid on, a cap is placed on the top, and secured against the entrance of water by being firmly tied to the center-pole. Generally, a stack is built upon the ground, and a considerable quantity of hay is spoiled at the bottom of it, by moisture absorbed from the damp earth. A more economical method would be to build a foundation for each stack of a permanent character, made of timbers framed together, and resting on rat-proof supports at least two feet above the ground. There is in this case no loss from moisture, and no hiding-places beneath the stack for rats, skunks, or other vermin to gather in.

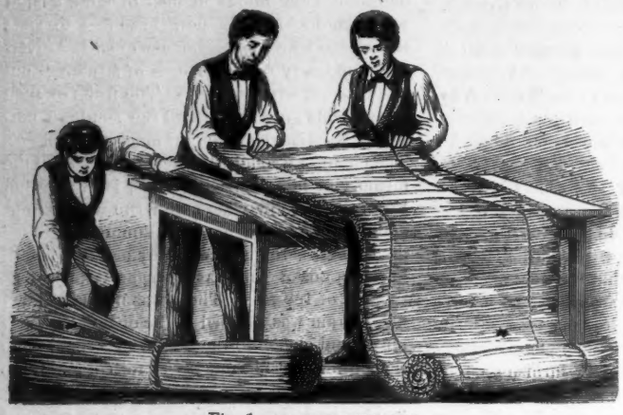


Fig. 1.—MAKING THE MAT.

Fig. 2.

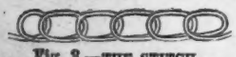


Fig. 3.—THE STITCH.

Fig. 4.

Fig. 5.—PUTTING ON THE THATCH.

FOXES.—These scourges of the farm-yard are best circumvented with poison. The steel-trap is sure, but the trouble is to get the fox's foot into it. They are always suspecting mischief, and it costs too much to circumvent their cunning where they smell iron. The most effectual remedy we have ever tried is arsenic or nux vomica applied to the carcass of a dead bird or lamb. If it is a bird they have partly devoured it is all the better. They will be pretty sure to come back to the spot to finish their feast. One dose of the poisoned meat fixes them. Then if you will saturate old rags in melted sulphur and scatter them about the sheep-pasture or poultry-yard, you will not have any more visits from the foxes the present season. They are easily frightened by the smell of sulphur. *

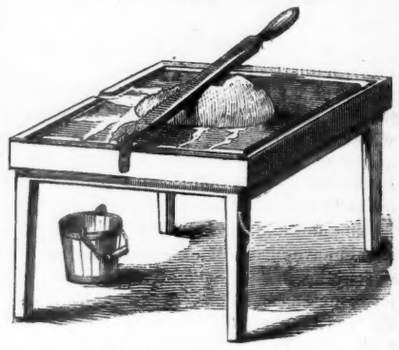


Fig. 1.—BUTTER-TABLE.

An Efficient Butter-Worker.

"L. W. L.," Orange Co., N. Y., and others, will find the butter-table herewith figured (figure 1) very convenient, and well adapted for economizing labor. It is made of white-oak or maple, soft-maple being probably the best timber that can be used. The top is a slab three or four inches in thickness, so as to have weight and solidity; four feet long and two or three feet wide, according to the quantity of butter to be worked on it. It is mounted on four stout legs 27 inches long. A rounded channel or groove passes around the edge to collect the buttermilk, which runs off into a pail placed to receive it, as shown in the engraving. The butter-worker is a triangular staff (fig. 2) three feet long, and four inches wide on each face, with a handle on one end and a swivel attachment whereby it hooks on to a staple fixed to one side of the table at the other end. The slab having been washed with salt water and well rinsed with ice water, is ready for the butter as it is taken from the churn. As soon as it is laid upon the table it is cut or gashed and pressed with the staff, and freed very quickly from the buttermilk. If desired, ice-water may be thrown over the butter, and it immediately runs off by the channel.

We have used a similar table and worker for some years, and have seen it frequently in use in the Pennsylvania dairies, where the choice

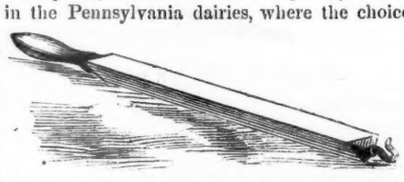


Fig. 2.—BUTTER-WORKER.

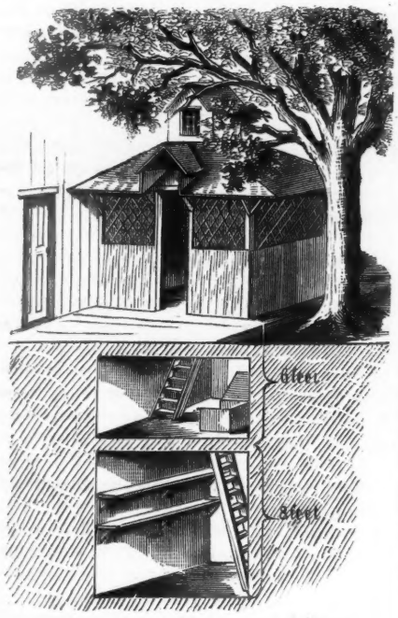
Philadelphia butter is made. Mr. William Crozier, of Beacon Stock Farm, whose butter sells at the dairy for 75 cents a pound, uses a worker which if not exactly like this is on the same principle. With our own experience added to these indorsements of it, we can recommend this to our Orange County and other correspondents as being far ahead of the old-fashioned bowl and ladle.

REMOVING VERMIN FROM SHEEP.—"J. S. L." Dipping the lambs after the sheep have been sheared is the easiest way of killing off ticks. If not done effectually the pests increase very

fast. Where they are not very numerous (or if scab is present but slightly) the carbolic solution may be poured along the back and guided through the wool. This is wasteful if the flock is large, but may do for a small one. It will have to be repeated, however, at intervals.

Milk-Cellar.

Several inquiries, mostly from Southern correspondents, ask how to build milk-cellars which can be kept cool. These inquiries bring to our recollection a milk-cellar which we saw a few years ago in North Carolina, and which we have not since seen improved upon anywhere. It was built in connection with a very pleasant and comfortable although an old mansion. The entrance to the cellar was from the porch which ran around the house, and adjoining the rear or kitchen door. A handsome shade-tree and a grape-vine protected the entrance, which had lattice-work on three sides, with a door, also partly of lattice-work, in the front. A few steps led down into a very cool apartment about six feet below the ground, well lighted from a glazed cupola in the roof, and built of brick, and whitewashed. It was circular, with a raised hatchway in the center, which



MILK-CELLAR—ELEVATION AND SECTION.

could be closed up tightly or opened at will. A trap-door at one side led to a stairway to a lower cellar, which was the milk-room. The upper apartment was used as a store-room for kitchen utensils, churn, and other similar articles. The lower cellar, when the hatchway was open, was well lighted. It was also of brick, and cleanly whitewashed. The floor was of brick, not cemented together. Shelves ran around this cellar at a convenient height on which were kept milk, cream, butter, and other things proper to a milk-room. Although it is now five years since we saw this cellar, its coolness, perfect cleanliness, and sweetness was so impressive that the remembrance of it is still perfectly distinct. The cellar was circular, about 10 feet in diameter, and in all about 14 feet deep. The lower apartment was ceiled over with wooden beams and a tight floor. The cost of the whole would not be beyond the means of almost every farmer, and its peculiar construction adapts it excellently to the needs of Southern farmers and planters on account of the extra coolness gained by the division into two apartments. We give on this page an engraving showing the plan of construction, which will make the description perfectly plain, giving the entrance building above ground, and a section showing the part beneath the ground.

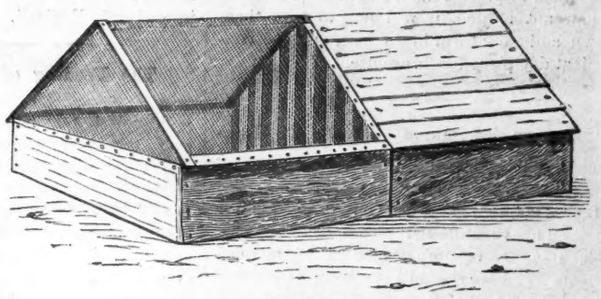
Waste from Woolen Mills.

Large piles of waste are frequently left about woolen factories, or are thrown into the water to float down the streams. A few manufacturers who have land to cultivate know that it is good manure; but its value generally is very much underrated. The owner of a woolen mill recently remarked that he thought it was worth about as much as so much snow to manure the fields. The price varies according to its supposed value. In some places they are glad to give it away to have the rubbish removed. In others it sells from one to ten dollars a cord. It is composed very largely of refuse wool made in the process of dyeing, carding, spinning, weaving, and dressing, with some chips and dirt. Wool, it is well known, is very rich in nitrogen, and makes a very valuable fertilizer. In this waste the particles are fine, and soon form food to be appropriated by the plants. We have seen this waste used with excellent effect in various ways. It does well as a top-dressing for meadows and lawns, spread at any season of the year when it can be procured. If evenly spread, it will generally disappear in a single season. If anything remains over it can be raked up and put in the compost heap. For hoed crops, it is better to compost it with other manures, covering the whole heap with a thick layer of peat or turf, and fork it over after lying two or three weeks. This woolen waste should be looked after by the farmers, who carry their produce to the factory villages and want a return load. The transportation will cost but little, and every load of woolen waste will add something to the productiveness of the farm. The product of wool in this country is estimated at 128,000,000 lbs., and a very large quantity is imported in addition. All this wool, either as waste in the manufacture or as goods worn out, ought to be returned to the soil. Fertilizers are every year becoming more valuable, and all these wastes in the process of manufacture ought to be carefully gathered and utilized. We have noticed that our most thrifty farmers who market their wares in villages seldom go home with empty wagons.

A Second Crop of Potatoes.—"N. E. B." If the soil is in good condition, one crop of potatoes may succeed another on the same plot. The best manure for potatoes, as for all crops, is well-rotted stable manure. Fresh manure tends to make scabby tubers, and promotes rot. Next to stable manure are wood-ashes and the mineral manures, such as phosphates, and, on some soils, guano. Very stimulating manures are apt to cause a great growth of tops, and few tubers proportionately.

A Safety Chicken Coop.

A chicken coop, which may be called a safety coop, is shown figured below. It consists of a frame, made of three boards six inches wide and about two to three feet long, one end being wanting. Upon this frame two other frames of strips two inches wide are nailed, so as to meet at the upper part. These two frames are covered with wire-gauze or mosquito-netting, and a handle of wire is fixed on to the top by which it may be lifted about. When a brood of young chicks is put into a coop, the safety-coop may be placed in front of it, under which the chickens can run free from danger of getting into wet grass, or wandering away from the hen; and safe from rats, skunks, or hawks. When one brood

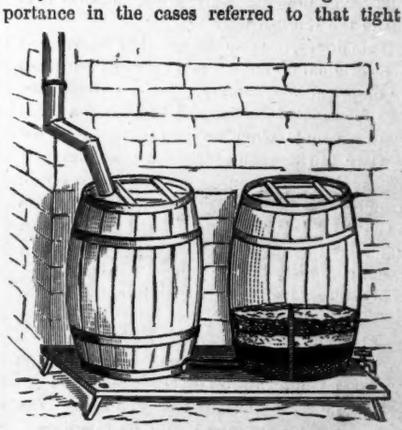


CHICKEN COOP.

is old enough to take care of themselves, the protection may be used for another.

A Cheap Rain-water Filter.

In many parts of the country there is a scarcity of water during two or three months of the year. At that time the ground has become parched, and all the rain which falls becomes quickly evaporated by the heat and dry winds, and none of it finds its way into the springs or wells, which are very often dry. Rain-water then becomes the only dependence. This, with those farmers who can not afford the expense of a cistern, is gathered into casks or barrels, and soon becomes foul and unfit for use. By a little contrivance, this water saved from the roofs of buildings may be kept perfectly sweet. It will be a matter of great importance in the cases referred to that tight



A CHEAP RAIN-WATER FILTER.

spouts should be provided, so as to secure all the water that falls on the roofs. This should be conducted into a barrel or hogshead provided with a close-fitting cover. Another cask or hogshead should be placed by the side of the first one, and both should be raised from the ground on some suitable support. The two

casks are connected together by a short pipe fixed in the bottom or lower part of the side of each. A board about twelve inches wide is fixed across the lower part of the second cask, as shown in the annexed engraving, and on each side of it a filter is arranged, which consists of, first, a layer of gravel, then a layer of small charcoal, then a layer of fine gravel, with some coarse gravel on the top. The water from the first cask passes into the second through one side of the filter, and, when drawn off by the tap or faucet, passes through the other side of the filter, thus being discharged perfectly clear from all impurities, and free from any unpleasant taste which may have been gathered from the roof. The casks should be painted, and, if possible, a shed or shade should be built over them to protect them from the sun's heat. When not needed, it will pay to take them down and store them in the barn or some convenient dry place for future use.

What are "Common Cows" in England?

Some months ago we should have said the question above proposed could be of no possible interest or importance to American farmers. But we should have been very much mistaken. At the Shorthorn Breeders' Convention, a resolution was introduced "that animals should be traced on both sides to imported animals, before they can be entitled to registry" in the American Shorthorn Herd-Book. This led to a very able and animated discussion. We have good Shorthorns in this country that can not be traced back on both sides to imported stock—animals that have sold for as high as $2,000 each. Mr. Allen, the editor of the Herd-Book, gave it as his opinion that animals might be registered that "had *six crosses* of Shorthorn blood, and then went back into something that was known and recognized." It was shown that *four* crosses were all that were required in England to entitle an animal to registry in the English Shorthorn Herd-Book. And Mr. Porter, of Illinois, asked, "When our farmers are told that *ten* crosses are of no account that end in the American woods, what are they to think when you take up another with *four* crosses, which you hold perfectly good, because that ends in the English woods?"

Judge Jones, of Ohio, said, "The Shorthorns are as original and distinct a breed of cattle as any other cattle whatever. We are *doing ourselves monstrous injustice*, and practicing a fraud upon the people, when we say otherwise. Now Mr. Carr [an English authority] says that four crosses will serve to make a capital cow out of a common market-cow. He says this "Durham ox that traveled, was got by the bull Favorite, upon a common cow. What is a common cow in that country? Why, a Shorthorn cow!"

Now there are in England Hereford, Devon, Sussex, Norfolk, Derby, Leicester, Longhorns, and Durham Shorthorns, and half-a-dozen or a dozen other breeds or sorts of native cattle, besides Ayrshires, Galloways, West Highland, and Alderneys, and we supposed that "common" cattle were such as are raised with no reference to breed or pedigree. They may have some Shorthorn blood in them, or they may not. They may sometimes be pure Shorthorn, and that is all that can be said. They are much more likely to be a mixture of half-a-dozen breeds, for according to our observation the ordinary English farmer is quite as much given to use a grade, cross-bred, or common bull as the farmers of this country.

We are as anxious as any one can be to keep our Shorthorn cattle pure. We have great faith in the value of a thoroughly established breed—not because they look better, handle better, give more milk, mature earlier, grow larger, or fat more readily than cross-bred cattle or grades, but simply because, when they possess these good qualities, they have far greater power of impressing them upon their offspring. But while we are anxious to exclude from the American Herd-Book all animals of doubtful origin, we want to see fair play, and no favor shown to English breeders that is not extended to our own breeders. We would not admit an English-bred animal to the American Herd-Book that would not be admitted if it had been bred in America instead of in England.

The Feeding of Young Turkeys.

Why is it that one farmer will raise nearly every turkey-chick that comes out of the shell, and do this nine years out of ten, without much respect to wet or dry seasons, while another loses from half to three-quarters with about the same uniformity? We know of men with whom success is the established rule. They are very systematic in this, as in all their other business. We visited one of these thrifty farmers, who raised 165 turkeys last year from nine hens, and upon inquiry found that he did about the same thing every year. We wanted to know just how he managed to secure this uniform result, and found him communicative. He insists upon good stock to begin with—the best always selected to breed from. Then he places great reliance upon regular feeding during the fall and winter, so that the flock becomes very gentle, and the hens make their nests immediately about the sheds and barns in places prepared for them. This is a great safeguard against foxes, skunks, crows, hawks, and other creatures that destroy the birds or their eggs. When the young first come off the nest they are confined in pens for a few days until they are strong enough to fly over a board inclosure one foot high. He feeds frequently with coarse corn-meal and sour milk until four o'clock in the afternoon. He found in his experience that he lost a good many chicks from the food hardening in the crop. There is danger from overfeeding. As the chicks grow, the sour-milk diet is increased, and during the summer it is kept constantly in a trough for them. They are exceedingly fond of sour-milk and butter-milk, and they grow very rapidly upon this diet. An incidental advantage, and a very important one he thinks, is that the young birds are prevented from straying very far from the house. They return many times during the day to the butter-milk trough for their favorite food. This, with Indian-meal, constitutes their principal food until midsummer, when insects are more abundant, and they wander farther from the house. This method can easily be tried on dairy farms.

How Early should Heifers have Calves?

There is a great difference in the practice of farmers in this respect—some feeding high and breeding as early as possible, and others keeping the heifers away from the bull until their third year, feeling quite satisfied with a calf at three years old. It is admitted that the heifers grow larger that breed late, and if beef is a prominent object in the animal this may be good policy. But in dairy districts we want milk, butter, and cheese at the earliest moment that the animal is capable of producing them economically. The Jerseys and their grades bring calves quite early, sometimes at 15 months old, frequently at 18 months, and as a rule at two years or under. The heifers that come in at fifteen months frequently lose their calves, and their growth is a good deal retarded. But the milking qualities of the animal are generally developed, and if the heifers have rich pasture and are well fed during the winter we prefer to have them come in the second spring after birth, say from 20 to 24 months old. This saves at least a year's keeping, and we think makes a better cow, although she may not be quite so large. The cost of keeping a two-year-old heifer in the older states is from $35 to $50 a year, and if there is no calf until she is three years old it is so much money out of pocket. We have never been able to discover much difference between the quantity of milk given by a heifer in her second and third year. If well cared for, the two-year-old begins to pay as soon as she brings a calf. If of good stock, and a heifer, the calf will be as well worth raising as any subsequent calf dropped by the same mother. She will probably give more than milk enough to pay for her year's keeping, and the calf will be clear gain. The cost of keeping cows in the Eastern States is now so great, that one needs to put them to breeding at the earliest day it can be safely done. At three years old the animal has consumed not far from eighty dollars' worth of food, whether she have yielded any return or not. If you can put fifty dollars to her credit at the close of the third year it looks a little more like making the raising of dairy cows a living business.

Steam-Plowing in Europe.

That steam-plowing is certain to become at some future period a regular branch of agriculture, may not be doubted any more than that steam will eventually supersede horse-power wherever it can be made available in the future as it has already done in the past. Agriculture can not afford to remain behind the other arts in any particular. It has been brought to that condition now in England and the East that convenience mainly determines whether the farm be plowed by steam or not. Its great economy is no longer in doubt. In the month of April last, at a meeting of the London Farmers' Club, a paper was read by a farmer, Mr. J. K. Fowler, relating his experience with steam cultivation. In the discussion, or rather remarks—for there was no divided opinion upon the matter—which followed, several other farmers gave their views in a practical and interesting manner. It appears that the use of steam is so rapidly extending, that at one factory in England 100, chiefly double, engines are made yearly to supply the home demand, and 60 yearly for foreign customers. Also, that the unfavorable condition of the public and farm roads, the weakness of the bridges, and the crooked fences and small fields greatly retard the use of the engines. That in Germany 50 engines are at work on the sugar-beet farms, and that the improved cultivation—a depth of 15 to 30 inches being reached—so increases the quantity and quality of the crop that the enterprise is very profitable. In England, 200 acres a week have been plowed by one set of engines and plows, with three men, and horse

and cart to draw water and fuel, to attend it. The cost of breaking up the ground 12 or 15 inches, and then cultivating or breaking or loosening the subsoil, not turning it over, to 20 or 30 inches deep, is there $3 (*three dollars*) per acre for both operations. (Here our circumstances would about double that cost.) There it pays a tenant farmer with but 200 acres to own a set of plows and tackle, the cost of which varies for different styles from $13,000 down to $3,000. Mr. Fowler estimates that the original cost of stocking a farm that could fully employ an engine and tackle would be but little more than an equivalent force of horses with the harness and implements.

The engines used in England are wholly on the round-about system; that is, the plows are drawn across the field by two locomotive engines, one at each headland, or by one assisted by an anchor on the opposite headland. The plows in a gang of seven, plowing a land six feet wide, are drawn by a steel rope which is wound upon a drum on the engine. The direct traction-engines are found to be inferior in operation. Not the least important benefit attaching to this method of cultivation is that the great depth to which the soil is opened not only renders it porous for the escape of surface-water, but renders it almost completely unaffected by drouths of the most serious character. This, then, is the present condition of steam culture in its native home and adjoining countries, and as one crosses our magnificent level plains from Ohio westward the thought occurs, What a field for the use of steam in place of the horse and plowman, who "homeward plods his weary way" after painfully breaking an acre and a half of soil in ten hours of toil.

The Soiling Question.

We note the following evidence of the value of the summer stall-feeding of stock: Mr. Harry Sedgwick, of Cornwall, Ct., tells us of a young man in his neighborhood who bought eighty acres of land for eleven thousand dollars. This land had previously kept eleven cows, four or five yearlings, and one or two horses. The first year he sowed fourteen acres of corn fodder, and increased his stock to twenty-five cows. He kept them during the soiling season on the product of twelve acres of this crop, and his receipts the first year were three thousand dollars cash. The next year, by the use of the same system, he kept twenty-seven cows, which made an average of one hundred dollars each, though using only a comparatively small part of the products of the farm.

J. R. B., in the Practical Farmer, gives an account of what he produced from two and a half acres of land put in first-rate order, and used for soiling and root-growing. The land was used from August 1st, 1871, to the end of the season of 1872. The corn fodder, green rye (for autumn use), and white mustard, furnished food for twenty-five cows for two months, and for thirty-five cows and two oxen for one month. In addition to this, he raised 840 forty bushels of round turnips, the same quantity of beets, and 250 bushels of rutabagas.

It is not necessary for us to say that such farming as this must inevitably pay, and that the more we have of it the better will be the average standard of our agriculture.

OIL-PRODUCING CROPS.—Some of our Western cities, but notably St. Louis and Minneapolis, are greatly encouraging the growth of oil-producing crops in the parts of the country from which they can draw supplies for the manufacture of oil. Linseed oil and castor oil are the chief results aimed at. In both these cities there are extensive manufactories of linseed oil, and the former is the headquarters of the trade in castor beans. There is no reason why a large breadth of land should not be devoted to such crops as these where the soil and other conditions are favorable. Not only are they directly profitable in themselves, but their growth will tend to reduce the excessive abundance of corn; while in addition the produce furnishes material for the employment of capital and labor in the vicinity of its growth.

Milk-pail Holder.

"An Old Subscriber" sends us a description of a milk-pail holder, which we have had drawn and engraved that it may be more plainly understood. It is a ring of heavy hoop-iron made

Fig. 1.—MILK-PAIL HOLDER.

large enough to receive the pail and hold it about one-third of the distance below the top. There is riveted on each side of the hoop a curved piece of hoop-iron large enough to fit easily upon the leg of the milker just above the knee. The holder is shown at fig. 1 as it is put together. When in use it is slipped over the bottom of the pail, and enables the pail to rest upon the milker's knees (fig. 2), so that it need

Fig. 2.—HOLDER IN USE.

not be placed upon the floor of the stable or yard, nor be held tightly between the knees, as is sometimes done, with very much inconvenience. By this little contrivance the milking is made much more cleanly and agreeable, and easy for the milker.

Which should Yield the Best Crop?

J. G. C., of Tennessee, writes that he went to that state from Dutchess Co., N. Y. He reads the *Agriculturist*, and "has faith in the highest of high farming," but has not implements and means necessary to carry out his ideas. He and a neighbor treated two adjoining fields of sandy loam mixed with shale as follows:

J. G. C.'s ROTATION.—Field of 15 acres, that had been several years in grass. Broke up in 1870 and planted to corn. In 1871, sown to oats.

In August, 1871, was turned over with a two-horse plow. Harrowed in September, and a bushel of Lancaster (Mediterranean) wheat sown per acre broadcast, and covered with one-horse shovel or bull-tongue plows; all in fine order.

December 1st, turned on 7 head of sheep, and let them remain on the wheat till March 1st.

In February, when the ground was covered with snow, 21 loads of winter-made stable manure were spread on the wheat. In March, sowed clover and harrowed thoroughly.

TENNESSEE FARMER'S ROTATION.—Field of the same kind of soil, but which had been cropped successively for several years. In 1870, planted to corn. In 1871, sowed to oats. In August, 1871, plowed. In September, sown with the same variety of wheat and harrowed in.

RESULT.—At the harvest of 1872, this field yielded more bushels of wheat per acre than the other field.

Mr. C. says: "The result did not, as I had fondly anticipated, develop the superiority of the 'Yankee mode of farming.' Can you point out where my method was defective?"

We do not see that the rotation and treatment differed essentially. A field which has produced grass for a number of years is not necessarily any richer in available plant-food than a field which has been under cultivation. Mr. C. covered his wheat with a plow, his neighbor harrowed it in. Perhaps Mr. C.'s seed was buried too deep. The 7 sheep on 15 acres could do no good—perhaps they did harm. The 21 loads of fresh stable manure, spread over 15 acres, could have little or no effect as a fertilizer. The harrowing in March may have pulled the manure into heaps and smothered some of the wheat. On the whole, therefore, there is nothing very surprising in the result.

Unless the land is in high condition, corn, oats, wheat, is not a good rotation. We should try to introduce clover more frequently. How this can be best done depends on climate and other circumstances. Where the winters are so mild as not to injure the young clover plants, we should try sowing clover seed amongst the corn in August, mounting a horse so that the seed could be scattered above the growing corn-plants. We have seen good clover raised in this way as far north as Western New York.

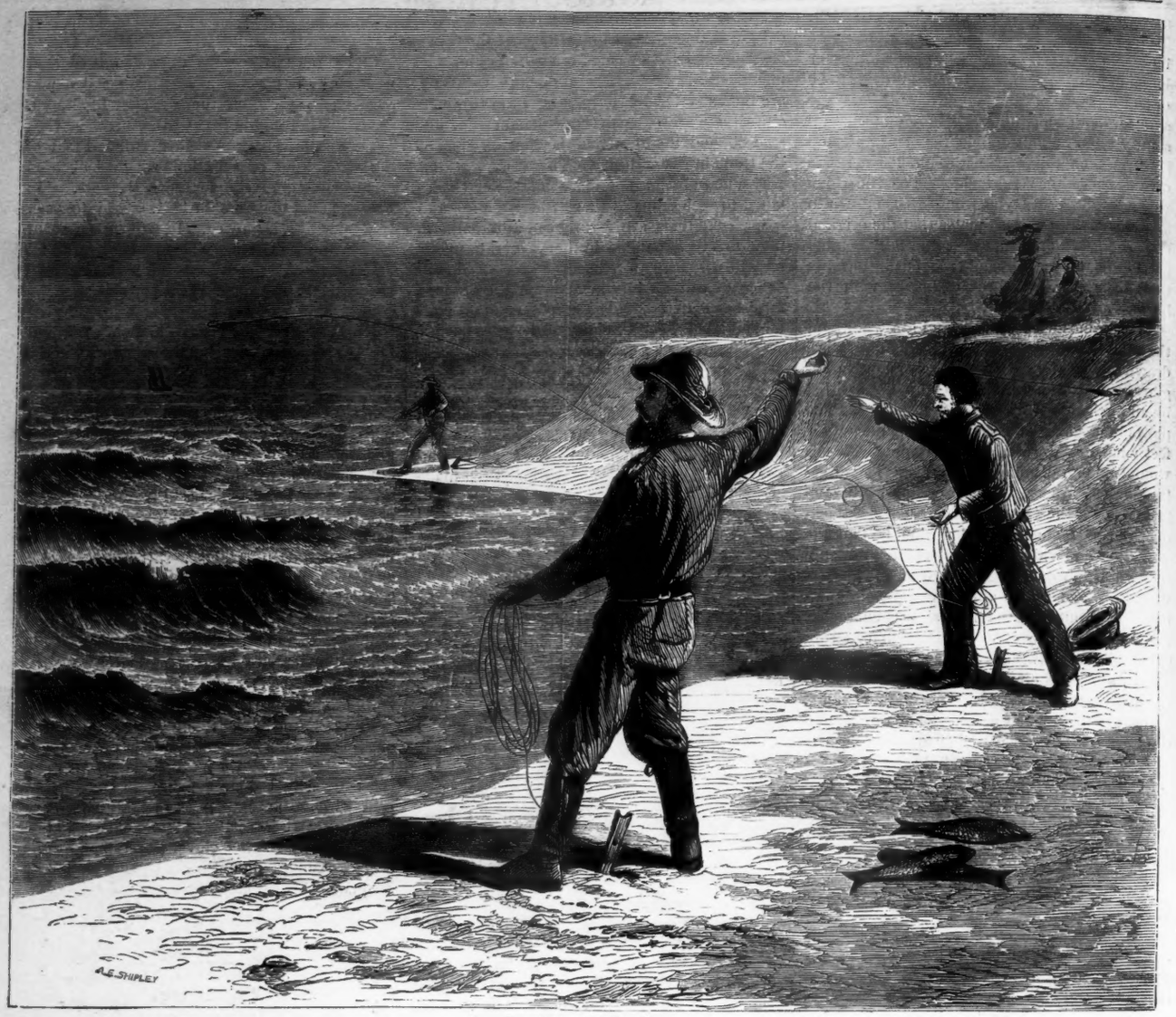
Blue-fishing.

BY R. B. MINTURN.

In the last days of June or in July the blue-fish appear in our Northern waters.

They come at a lucky time for the fisherman. The cod and mackerel seasons are over; that finest of sea fish, the striped bass, and the tautog, vulgarly called black-fish, are few and far between, and the "scuppaug" are so small that there is little profit in their taking. Blue-fish come to the rescue of the fisherman, and give him a busy and often a profitable season.

There are three modes of taking blue-fish. The most common of these, and the one best known to our amateurs is "drailing." This is always done in sail-boats, with some forty or fifty fathoms of line; but the length of this is graduated by the speed of the vessel, the object being to keep the "drail" just under water. This last-mentioned article is made by running about a pound of lead on to the "shank" of a large No. 1 Limerick hook. This "drail" when finished is cylindrical in shape, tapering to a sharp point at both ends, beginning two-thirds of its length from the hook, and growing smaller each way until it meets the shank of the hook at one end and a "cock-eye" at the other. Into this latter is fastened a stout thong of leather, to which is attached the line, a "cable-laid" cord of the best material, one-sixteenth of an



[COPYRIGHT SECURED.]

BLUE-FISHING FROM THE SHORE.—*Drawn by Edwin Forbes for the American Agriculturist.*

inch in diameter perhaps. Over this "drail" is now stretched an eel-skin, its usual toughness intensified by lying a month or so in strong brine. This is fastened on by running lead and all right through it, and tying the skin at the junction of the leather and eye. It is allowed just *not* to reach back to the foot of the hook, and a blue-fish will take this strange-looking bait when it turns up its nose at a more delicate one. Perhaps I might add that the lead is only added to keep the hook down in the water, for the speed of the boats would skip a lighter hook on top of it like a feather.

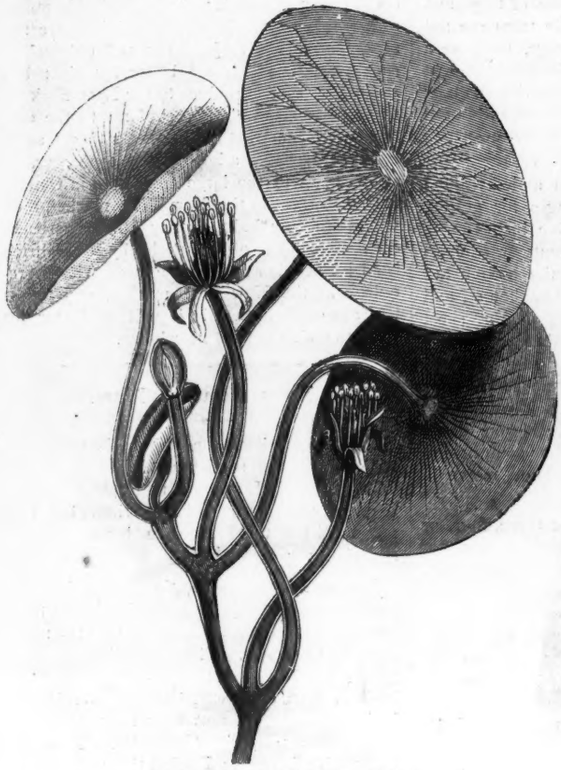
Not so with the drail used in "heaving and hauling" either from shore or from a boat at anchor. As the latter is merely a modification of the former, the description will hold good of both. The drail is heavier, longer, and slimmer in proportion to its length than the other, and in shape is something like a fish, although the resemblance is not very marked; it is not covered with eel-skin, but is kept bright by use and an occasional rubbing in sand. The hook is the same size as the other, the lead perhaps eight inches long. The fisherman stands on the beach, as near the edge of the water as he can get, with his left foot well forward, holding the coil of line in his left hand; with his right hand he grasps it about eight feet, sometimes more, from the drail; that portion of line between his hands is left a little *slack*, and the "shore end" is fast to the stick on which it is wound when not in use; this stick is stuck firmly in the beach. Throwing the drail from him on the sand, so that the line between it and his right hand is *taut*, starting it with a jerk, he swings it around his head, the lead describing a circle about the level of his shoulder. He swings it half a dozen times, then lowers his hand and *lifts* it into the air, at the same time holding the coil loose and letting it flake out; he generally heaves at an angle of 33°. As soon as the line is all out, he stoops quickly, grasping it with his left hand. After the drail strikes the water, he lets it sink a little, and then hauls in briskly, hand over hand. The moment the fish strikes the hook he is off, right and left, up and down, now with his nose in the sand, and then reaching his whole length out of water, madly shaking the hook, then again running right toward the fisherman—this is his most dangerous trick, for if he succeeds in getting any slack he is almost sure to shake out the hook. This sport is often watched by crowds of spectators, who hail the landing of each fish as if it were their own spoil. To the fishermen themselves it seems to be more work than play.

The take, of course, varies with each day, sometimes they may get none, again they may count as high as forty. The fish are disposed of to smacks, which are almost always on hand to take them; in them they are salted down, taken to the coast cities, freshened, and sold to the fish-mongers, who peddle them out as fresh blue-fish. The original price paid the fishermen varies from 1½c. to 2c. or more per pound undressed. Supposing our fisherman to have caught forty fish, they will probably average him six pounds apiece; this, at two cents per pound, would give $4.80 for his labor, not a bad day's work for him. If no smack is at hand, he dresses them and salts them down, selling to the smack whenever she may come. He gets more per pound for his fish, but as they dress away a third he prefers selling them fresh.

A blue-fish, to be good, should be cooked before he is an hour out of the water. It is a fish that loses its good qualities by keeping, and the fish of our markets is no more like Simon-pure, fat, juicy blue-fish, dressed before being dead and cooked at once, than chalk's like cheese.

Some Water Plants.

Those who look over English and other foreign catalogues will be surprised to see our common water and marsh plants offered at high prices. In a recent catalogue we read that "*Symplocarpus fœtidus*, a very interesting American Aroid, with large, handsome foliage (rare), 2*s.* 6*d.*" When we say that this rare American plant is our common Skunk-Cabbage our readers may think that the English cultivators have strange tastes. If it were not common with us we should value it, for there are few plants more odd in their way of flowering or more luxuriant in foliage than this malodorous inhabitant of our swamps and marshes. We allude to this to show that European cultivators take advantage of every opportunity to beautify their places. If one of them has a pond or stream he considers himself fortunate, as he can then grow numerous aquatic plants in the water, and along the wet margins he can introduce many things that flourish in such situations. In this country we see but very little of this phase of cultivation. Where one has the facilities, there is a large number of water and marsh plants that he can grow, and that can be grown nowhere else. We give illustrations of two of the commonest of our aquatic plants, both of which will adapt themselves to deep or shallow ponds. The engraving on the right is the Water-Lily, more frequently called Pond-Lily, and sometimes Water-Nymph, than which no flower on land or water is more beautiful. The root, or, more properly, root-stock, is very large, and lies in the muddy bottom of the pond; this sends up leaves upon leaf-stalks, the length of which is governed by the depth of the water. The leaves are nearly orbicular, cleft at one side, and from six to nine inches across. The flowers are borne singly upon stems that allow them to reach the surface. When closed, as it is late in the day, the flower shows only as a green bud, the four sepals completely enclosing the numerous petals. The flowers open early in the morning, and float upon the surface with a purity of whiteness and a delicacy of perfume unequaled by the rarest exotic. The flowers are often nearly six inches in diameter. When the glory of the flower has departed, what remains turns downward to ripen the fruit under the surface of the water. This flower is particularly interesting on one account: it shows a complete gradation between petals and stamens. Some of the inner petals show a tendency to become stamen-like, and as we go towards the center of the flower we find every stage between perfect petal and perfect stamen. It is not rare to find localities where the flowers are pink, and we have heard of, but never have seen, a blue one. Our common species is *Nymphæa odorata*, and in Western New York and other localities is *Nymphæa tuberosa*, which has scentless flowers, and bears tubers upon its root-stocks. When found, as it may be, growing in very shallow water, the Pond-Lily may be grown in a tub of moist earth as a semi-aquatic.



WATER-SHIELD.—(*Brasenia peltata.*)

WATER-LILY.—(*Nymphæa odorata.*)

The other plant that we figure is the Water-Shield, *Brasenia peltata*. Its oval leaves are centrally attached to the foot-stalks, and are always noticeable as they float upon the water. They have their use as forming a shade and covert for fish, as anglers are well aware. The flowers are of a dull purple, and come to the surface to perfect themselves, but make but little show. One peculiarity about this plant is thatthe stems, flower, and leaf-stalks are all clothed with a coating of transparent mucilage, which is soluble in hot water, and has been used for the same purposes as Iceland moss. This aquatic plant has a remarkably wide distribution, it being found not only in this country, including the northwest coast, but in Japan, Australia, and India.

Packing and Marketing Produce.

BY J. R. HELFRICH.

[Every one engaged in growing fruit or vegetables for market knows that the raising of the articles is but one step towards getting a return for his labor. No matter how well his produce is grown, if not properly marketed his labor is lost. These articles, by Mr. Helfrich, upon the customs of the New York market, are so important, that we feel that no apology is necessary for occupying a considerable space with them.—ED.]

TOMATOES.

Tomatoes sent from the South or to a distant market should be picked rather green. In the latitude of Savannah and Charleston they should be picked when they begin to turn red on the blossom end, and they will ripen in transit; at places nearer by, such as around Norfolk, they should be riper or nearly ripe when picked. Do not put up any that are fully ripe, as they will mash, and the juice will sour and spoil the rest. Keep out all worm-eaten, cracked, and sun-burnt fruit. Tomatoes should be packed in crates holding one bushel. These are made of two end-pieces and one middle-piece, 9 × 15 inches, and one inch thick. To these laths 24 inches long are nailed all around, leaving openings of about one inch between the laths. In New Jersey and other places near New York the fruit should be nearly ripe, and is best sent to market in bushel baskets. In packing in crates it will pay to handle the fruit carefully, and lay it in placing one tomato at a time. Shake the fruit down well, and fill the crates so as to have to press the laths down gently in nailing, so that the fruit may not move in handling. In using baskets, place the fruit in stem down, and fill the basket a little rounding. The large smooth

red is the most valuable variety for the New York market.

CUCUMBERS.

For field culture the "White Spine" is best. Pick the cucumbers when from four to six inches long, and pack them in bushel crates made the same as described under tomatoes. Pack tight, and keep out all crooked, gnarled, or yellow ones. They may also be packed in clean barrels, with holes bored in the sides, and covered with muslin or bagging to give ventilation.

GREEN BEANS.

Pick when the dew is off and the beans perfectly dry, and put in the shade a short time until they have lost the heat received from the sun. Keep out all bruised or decayed ones, and pack in bushel crates same as recommended for tomatoes. For beans, the laths on the crates must be closer together than for tomatoes. The beans should be young and tender when picked and snap when broken, as it will not pay to send them when too old to snap. They may also be shipped in barrels covered with cloth, and the sides cut or bored for ventilation.

GREEN PEAS

should be picked, handled, and packed the same as green beans.

CHERRIES.

There is none of the small fruits that require so much care and that is more difficult to get to market in good order than the cherry. They should be picked when perfectly dry, leaving the stems on, taking hold of the stem instead of the fruit in picking. Keep out all over-ripe and rotten ones, and keep the fruit spread out thin in the shade a short time to cool and thoroughly dry off. Put in crates made of two ends and a middle piece, four inches wide by 16 inches long, of $^5/_8$-inch stuff. Make the sides with lath or thin boards, leaving sufficient openings for ventilation. Fill the crate full, and gently shake or press down the fruit. Mark the tare of the crate on one end. Cherries can also be put in long flat baskets holding about 25 pounds; these are covered with muslin.

GRAPES.

There is a greater variety of packages used for sending grapes to market than for any other kind of fruit. For a long distance, or where the cost would be too much for the return of the empty boxes, the best packages are small boxes holding from three to five pounds. These are made as light as possible, but strong enough to bear the handling and shipping. The boxes should be put in skeleton crates holding from 60 to 90. Of the small boxes, we think the Fairchilds and the veneer box of the "American Basket Co" among the best. The boxes should be packed from the bottom, first laying in a sheet of white tea-paper, then lay in the bunches keeping the stems up, and gently press the grapes close together. Fill the box so as to press them down solid, but not hard enough to mash the grapes. One crushed or bruised grape will ferment and spoil the whole box. Nail the bottom on the box, and put the label on the other side, so that that will be the side to open, and when opened will show a nice, smooth surface of fruit, with the stems hidden from view. Mark tare of crate on each end.

We think the long, flat, tight boxes holding about 30 pounds very objectionable, as they are liable to rough handling, and the fruit invariably comes to market mashed and bruised, and consequently will not command a fair price.

The very best way to send grapes to market is in crates such as are used for forty-five pints of strawberries; those that have the corner-pieces on the inside are preferable. Flat boxes or trays are made that will easily fit the crates. The trays are so made that three will fill the crate. Each tray should have the shipper's name and also the tare marked on it. The crates should also have the tare of trays and crates marked on them. If the tares are not plainly marked on each package, we have a trouble when making sales to deduct the weight of the package. For want of knowing the tare, we are delayed in making returns of sales until the return to us of empty packages—which often gives great dissatisfaction.

Boxes with the covers hinged and furnished with a hasp are good packages for grapes. They should be made about five inches deep, fourteen inches wide, and twenty-two inches long inside; they should have the bottom put on with screws, so that it may be taken off and the box packed from the bottom. Put sheet of white paper in first, and then a layer of bunches, then a sheet of paper, then grapes, and so on, taking care that the bunches lie close together with the stems up. Pack so full as to make it necessary to press the bottom down gently to bring it to its place, thus compressing the grapes so that they will not move in handling.

Round paper boxes, holding three, four, or five pounds each, may also be used. In packing these, use a tin hoop of the same size and depth as the paper box inside. Place the tin hoop on the cover, and pack the grapes in the hoop, stem up, and fill and gently press down; then put the box on and draw out the hoop; this will leave the grapes all tight and the stems out of sight when the box is opened. Pack the paper boxes in skeleton crates holding 12, 18, or 24 boxes each.

In gathering the grapes use care to not rub the bloom off more than can be helped. The best plan, if crates and trays are used, is to put the trays on a wheelbarrow and move along among the vines. In gathering, take hold of the stem of the bunch and cut off with a pair of scissors; at the same time trim out all unripe berries, and lay the bunch in the tray *stem down*. When the trays are full they require no further handling. Use care to put none in but good, fine clusters. The seconds should be shipped by themselves, or used up at home. After the trays are filled, put them in the shade to cool off before packing in crates. If to be packed in tight boxes, the grapes should be cut, carried to a cool, dry place, and allowed to lay about twelve hours to dry and wilt the stem, which will facilitate the packing and also prevent molding. If the stems are not dry when packed, and the boxes lie any length of time, the grapes soon become moldy, and the sale of them is spoiled.

NOTES ON ASPARAGUS.—"Trojan," Lansingburgh, N. Y., in commenting upon Mr. Helfrich's article on asparagus in the May number, says: "He might have added that the knives were better for being ground half-moon shape; that the easiest way to raise it was either in rows two feet apart, or in beds three feet square, with 1½-foot space between, which allowed of the ground being plowed through both ways and the earth thrown on top of the square nice and evenly, so as to smother all the weeds; that the best way to sell it is by weight, so as to save the labor of bunching, which we find to be one of the greatest expenses attending it; that brewers' hops, privy or blood, or very fine bone manure were the best, as horse-dung contains so many weeds that you can not get along, no matter how well rotted; that in warm weather it must be cut every other day, or else let grow up for good; that where salt can be procured cheap enough it is the great desideratum, as it will both kill the weeds and improve the asparagus."—If "Trojan" can sell unbunched asparagus, so much the better for him; but when one sends produce to the New York or any other market he must conform to the customs of that market if he expects to get satisfactory prices. If a lot of loose asparagus, or strawberries in the large trays used in Cincinnati, were sent to the New York market, they would probably find their way into the garbage-cart. The object of the articles by Mr. Helfrich is to let people at a distance know what is required in the New York market, and unless they can conform to this it will be better for them to seek a market near home.

Notes from the Pines.

A great deal has been written in prose and verse about the resplendent hues of autumn foliage, and, if I mistake not, spring flowers have had mention by the fine writers, but I do not recollect that any one has gone into ecstasies over

SPRING FOLIAGE.—Yet there is much in the varied hues of the just developing leaves to attract the observer who has an eye for the minor beauties of nature. The expanding leaves of the pear and those of the ash-leaved maple are both of a tender green, but quite unlike, and both are quite different from the near-by Virgilia (more properly *Cladrastis*). Then just beyond is a Weeping Poplar, the young leaves of which are of a brownish green, *foncé* the French would say, as dark as the neighboring Gingko tree is lively. An artist would describe the foliage of this last-named tree as "gamboge green." Then a little nearer the house is a golden glow from the young leaves of what the nurserymen call *Spiræa aurea*, but which is only a bright-leaved variety of the well-known Nine-bark (*Spiræa opulifolia*). A little more at the right is the charming purple-leaved variety of the common Barberry, and still farther along are the Purple Hazel and Purple Bush. These last-named are varieties cultivated for their colored foliage, but there is enough in the different shades of the young leaves of trees in their normal condition to make the effects of spring foliage worthy the study of the landscape gardener. I have alluded to the

WEEPING POPLAR, which is one of the most desirable of lawn trees. Its branches are most decidedly pendulous. It comes out very early, the leaves hold on late, and all through the season its quivering foliage upon the drooping branches makes it a most enjoyable tree. This and similar weeping trees increase in height very slowly, and they are grafted upon upright stocks of some kind. The nurserymen graft all such trees too low. My poplar was grafted at about eight feet, but this is not high enough; the branches already sweep the ground. I am growing a Lombardy Poplar to a straight stem, and when it gets about fifteen feet or so high I shall graft it with the weeping variety, and hope for a tree worth having. I saw to-day that a neighbor had planted near his house a Weeping Ash, grafted not above six feet high.

This will always be a nuisance. I had heard much of the

DOUBLE LILY OF THE VALLEY, and at last procured a root. Now, after three years considering the matter, it has bloomed. It has only confirmed me in my belief that some flowers are not improved by doubling. Nothing can exceed the simple grace of a flower-spike of the ordinary Lily of the Valley. This double one is a miserable monstrosity, a burlesque upon the real thing, and I shall only grow it, as I do several other things, to show my friends what not to cultivate. Among the many things that dealers abroad praise "within an inch of their lives" it is gratifying to find now and then one that meets the expectations these descriptions have excited. One case of this kind is the

DOUBLE CRIMSON THORN.—This, if I mistake not, was sent out by Wm. Paul. At all events, I procured one five years ago of Ellwanger & Barry, who are sure to have all novelties of this kind. This is the first year it has consented to bloom. And isn't it a beauty! Imagine a handsome shrub eight feet high, and covered from top to bottom with clusters of miniature roses the size of a split pea, and you will have an idea of it. Nothing can be more charmingly beautiful. It is worth waiting for not only five years, but twenty-five years. You see, a few years more or less make but little difference to us old fellows if we get a good thing at last, and this Double Crimson Thorn is most emphatically a good thing. I am sorry they called it "crimson," as it is not, but a most charming full rose color. How I wish you could print in colors.

THE AQUILEGIAS OR COLUMBINES are favorite plants with me, and I have a fair collection of them, the queen of which is our Rocky Mountain Columbine, *Aquilegia cærulea*, the spurs to the corolla of which are very slender, and about two inches long, giving the plant an airy grace that none of the others possess. I go in early morning to the bed and find it all right; I go again at evening and find it all wrong. The beautiful slender spurs are broken, bent, and bedraggled, and half of the beauty of the flowers has departed. Master Eddie, whose young eyes are sharper than my old ones, detected the cause of the mischief. I watched the accused, and found the charge sustained. Right alongside stand a number of other Columbines, the spurs of which are short. Mr. Bumblebee—he is the chap—when he comes to the bed, goes directly for the center of the other Columbine flowers, but when he comes to the flowers of my favorite *cærulea* he makes no motion to get the honey by way of the natural opening. The cunning fellow knows that his tongue, proboscis, or whatever his honey-getting organ may be, can not reach into the two-inch spurs of my favorite, so, in a most business-like manner, Mr. Bumblebee goes at once to the outside of this flower, and cuts a hole near the end of the spurs from which to extract the honey. Insects don't reason? I don't believe it. If instinct tells that Bumblebee to operate in this way, I think it a great pity that some white folks were not endowed with instinct.

VINES AND SHRUBS still show the effects of the past winter, and even trees considered hardy are much retarded, and only to be saved by severe pruning. In a number of cases, the bark has burst and fallen away upon such hardy trees as maples and apples. Those things that still seem alive I let alone and wait. The havoc among the grape-vines is something fearful. Those coarse things of Rogers', that one would think proof against a stroke of lightning, are badly killed. Indeed, the only entirely unharmed vine in my collection of some fifty is one of Dr. Wiley's South Carolina hybrids.

Garden Plans.

We do not publish many garden plans, for the reason that the plan should be made to suit the surroundings, and as these are seldom alike in two places—save twin lots—it is best for each to work out a plan to meet the particular case. A few general hints may not be amiss. Whatever else there is, let there be a plenty of turf. The humblest place can afford an expanse of grass, which if large is dignified by the name of lawn, and if small is called only a grass-plot. This gives an air of neatness if there should be no flowers, and if there are flowers, no matter whether costly or common, their appearance is many-fold enhanced by the turf-setting. Do not strive after anything elaborate and complicated. Recollect that the more elaborate the pattern, the greater will be the care required in keeping. Scroll, chain, and other borders look wonderfully well in print, especially if they are printed in colors. But these plans which are carried out in the favorable climate of England only by keeping a number of men at them all the time, would utterly fail with us, where one gardener is expected to do everything, and where in the majority of cases there is no gardener at all. Lay out only what can be well cared for from spring until frost. Circles, ovals, ellipses, and egg and "palm-leaf" shapes, neatly cut in the turf, are much better than anything more complicated. Avoid making beds with sharp points and acute angles. If one has only room for a single bed, as in a front-yard in town, he will get more satisfaction out of plants with striking foliage than with flowers. A circle edged with some of the silvery-foliaged plants, such as Centaureas, Cinerarias, and Artemisias, then a row of Achyranthes Lindeni, and within this a center of some of the Golden Coleuses would be bright and showy all summer. This is only a suggestion, as the bed may be planted in a great variety of ways. A group of Cannas would give both fine foliage and flowers, and this may be edged with a row of Gladiolus with some low-growing plant upon the extreme margin. Very good effects may be produced with little expense by the use of annuals, among the most popular and best of which is Phlox Drummondii in its various kinds, from white to deep scarlet.

In laying out beds of any kind, recollect that every foot of path and every foot of margin implies a promise to keep the one clean and the other neatly trimmed. Unless there exist the ability and the inclination to do these, the beds had better not be laid out but the grass left unbroken.

Destroying Insects—Bellows-Syringe.

A large share of the time and ingenuity of the horticulturist is devoted to the destruction of insects, and he is quite sure to give a warm welcome to anything that promises him aid in this direction. Showering plants with insect-killing liquids has long been done by means of syringes, pumps, and the common watering-pot, but with all these the difficulty is to get the liquid so diffused as to touch all parts of the plant. When Mr. B. K. Bliss was in Europe a few months ago, he came across a *Soufflet Injecteur*, which we may call a Bellows-Syringe, which seems to us a capital thing. Probably most of our readers know the perfume-sprinkler of the drug-stores, and the atomizer or spray-producer of the surgeons. The perfume-sprinkler is the simplest. Two glass tubes are fixed at right angles in such a manner that a stream of air from one will be blown directly across the mouth of the other. We all know that a strong wind blowing across the top of the chimney will cause a tremendous upward draft in the chimney. This sprinkler operates upon the same principle. If we put one of these tubes, securely fastened at right-angles, into a liquid, and blow into the other and horizontal tube, the blast of air going across the end of the upright tube will cause a partial vacuum in that, and the liquid will rise. As the liquid rises it comes in contact with the blast from the horizontal tube, and is divided into the minutest spray, liquid-dust if we may say so; or, as the surgeons say, it is atomized, a very bad word indeed. Instead of blowing through the horizontal tube, an India-rubber band is now used, by the successive compression of which the stream of spray is easily kept up.

An ingenious Frenchman, M. Pillon, has made this principle serviceable in horticulture. His blast of air comes from a bellows, his "atomizer" is attached to the end of the nozzle, and the liquid to be used is contained in a globular receptacle hung to the tube of the bellows in such a manner as to allow that to be held in any position without spilling the liquid. The liquid to be used is put into the brass globe and the bellows worked; a fine spray issues in such a copious stream that it is easy to reach every part of the plant and bedew it with whatever insect-killing liquid may be desirable. One great advantage of this apparatus is its economy. In the ordinary methods of treating plants with liquid insecticides a very large share is wasted, while with this only so much as is needed to just moisten the leaves and stems need be used. Carbolic soap and other preparations of carbolic acid, whale-oil soap, tobacco water, infusions of Quassia, Chamomile, and Pyrethrum (Persian Insect Powder), and solutions of salt, carbonate of ammonia, and aloes, or whatever may be found useful against any particular insect, may be employed. The inventor makes one very good suggestion, which is that these liquids should be sweetened with sugar or molasses, probably, although he does not say so, to cause their adhesion to the plant, and greater persistence. The engraving upon the next page shows the apparatus. The bellows is smaller than those used in kitchens, and the ball is about four inches in diameter.

The Climbing Buckwheat.

The Climbing Buckwheat, or, more properly, False Buckwheat, is sent to us so frequently for determination that we give an engraving of it. In some localities it is very abundant, but it can hardly be classed among the troublesome weeds. It inhabits low grounds, and is most abundant in localities too wet for cultivation. We always supposed it to be an annual, and never examined the root, but find the authorities divided upon this point. Its botanical name is *Polygonum dumetorum*—the Bush or Thicket Polygonum. The various Smart-weeds and Water-peppers belong to this genus, and Buckwheat and Dock are closely related to it. From the resemblance of our plant in both flower and

fruit to the Buckwheat, its common name, was, naturally enough, applied. It is one of the several climbing species of Polygonum (some with very rough stems), and is a vigorous grower, its twining stems running to the length of ten or twelve feet or more, and often completely draping bushes and brush-heaps with its broad, heart-shaped leaves, from amongst which arise the numerous loose and irregular flower clusters, which are some three inches long. The flowers are greenish, often edged with white or purplish, and in fruit the enclosing calyx has a broad white wing, which makes the plant conspicuous and not inelegant. It does not make much show until late in summer, being in perfection in August and September. The seeds are a favorite food of birds. Another species very like this, but smaller in all its parts, is the Black Bindweed (*Polygonum convolvulus*), which is often common in cultivated grounds, and sometimes troublesome.

CLIMBING BUCKWHEAT.—(*Polygonum dumetorum.*)

Budding.

Grafting and budding are methods of propagating plants alike in principle but differing in detail. The most important differences are that in grafting we use buds of the previous year inserted into the stock with a considerable portion of the twig upon which they grew, and the grafts, being inserted early in the season, are expected to develop the same season. In budding, we use buds that have been formed the same year, insert them late in the season with as little as possible of the twig on which they grew, or none at all, and (in the case of fruit trees in all northern localities) we insert them so late in the season that we do not expect them to push into growth until the year following that in which they are inserted. We have numbers of letters asking about budding, as we do about those of other operations in horticulture. We can not, even to please our many new readers, repeat these elementary matters at short intervals. In July, 1866, we gave a full illustrated account of the process of budding, which we think will enable any one to perform the operation with success, and we must refer our friends who have asked for instruction in budding to this article. Besides, in "Barry's Fruit Garden," a work which should be in the hands of every fruit-grower, this (and all other operations in in fruit culture) is explained in full.

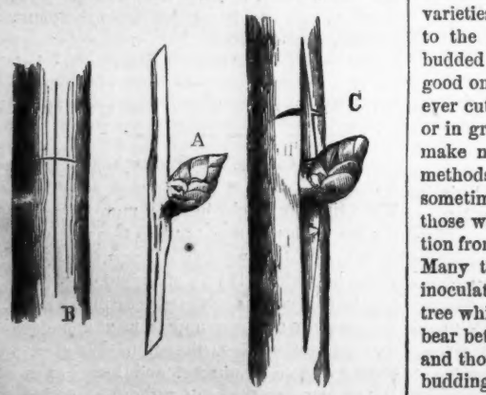


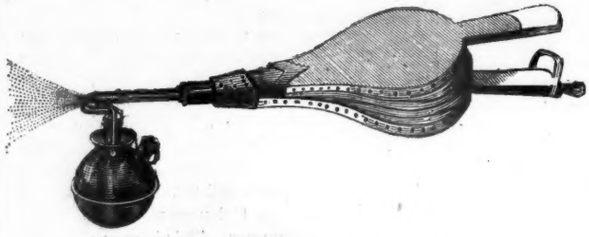
Fig. 1.—BUDDING WITH A CROSS-SHAPED INCISION.

Budding, which is called in Europe "shield-grafting" and "bud-grafting," is performed at any time when well-developed buds can be procured and the stock is in active growth. For fruit trees, with us, it extends with the different varieties from July to September. In answer to the inquiry if a tree is better for being budded or grafted, we reply: If the tree is a good one, of clean, healthy growth, with whatever cutting has been done, whether in budding or in grafting, healed or healing over, it would make no difference to us by which of the two methods the tree was produced. Budding is sometimes called inoculating, a term which those who have received their ideas of inoculation from vaccination gives a wrong impression. Many think that something is by budding or inoculation introduced into the system of the tree which so changes its character that it will bear better fruit. This is an unfortunate error, and those who hold it should understand that budding is simply planting a bud from a tree that we know to be good beneath the bark of one that we either know to be bad, or, as is generally the case, know nothing about.

Referring to the sources already quoted for information about the ordinary method of budding, we give an account of two modifications which are sometimes found useful, especially by nurserymen.

Several years ago we received from M. Charles Baltet, of Troyes, France, a copy of his "*L'Art de Greffer*," "The Art of Grafting," a completely exhaustive manual, giving every known method of grafting and budding, with copious illustrations. M. Baltet is an eminent French horticulturist, and this work of his is one of the most valuable in horticultural literature, and we are glad to know that it has been translated into English and published by Wm. Robinson, editor of "The Garden." We have received an advanced copy of the translation and are quite sure that a book of its value will find its way into the stock of our publishers.

The modifications of budding to which we refer are to meet particular conditions. In some ornamental trees the bud is too large to be held conveniently inserted in the ordinary way of budding. In this case the bud is cut long, as in *A*, fig. 1, a cross-shaped incision made as in *B*, and the bud inserted as in *C*. Treated in this manner, the bud can be held by a ligature both above and below. This plan is followed in European nurseries with the chestnut.



THE BELLOWS-SYRINGE.—(*See page* 263.)

The second method is with an incision just the reverse of the ordinary one. Generally, the cross incision is made above the longitudinal one, but it is sometimes better to make it below, as in fig. 2, which shows the bud, the incision in the stock, and the bud inserted. This is used upon stocks where there is a flow of sap so great as to interfere with the union of bud and stock, as in the maples in cold countries and the orange in warm ones. There are numerous other modifications of budding, for which we refer those desirous of learning all that is known about this kind of propagation, as well as grafting proper, to the book itself.

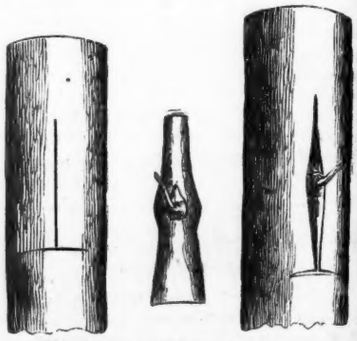


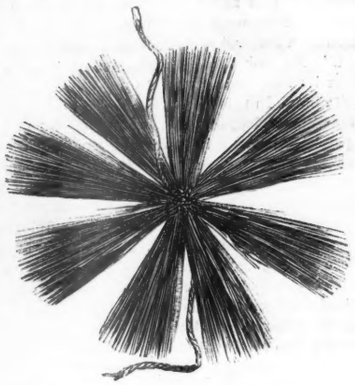
Fig. 2.—AN INVERTED T INCISION.

THE HOUSEHOLD.

☞ *(For other Household Items, see "Basket" pages.)*

Use for Old Hoop-skirts!

DEAR MR. EDITOR: When some one—if not Gail Hamilton it might have been—discoursed some years ago on "The Depravity of Inanimate Things," she did not, if I recollect aright, cite the case of discarded hoop-skirts. I never fully believed in the indestructibility of matter until hoop-skirts became common. It is easy to get a skirt,



HOOP-SKIRT CHIMNEY-SWEEPER.

for you can go and buy it; but just try to get rid of one and see. You can't break it up, as it is too strong or elastic; you can't burn it, as it is steel; if you put it in a rubbish heap and cover it out of sight, it will some how get out and be found lying right across your pathway. Is there anything inanimate that one would not rather see than a cast-off hoop-skirt? The miserable, abject, bedraggled, and hopelessly useless thing will meet us everywhere—in the streets and lanes of cities, upon telegraph wires, and hanging to the branches of trees. It is about the only thing that a city rag-picker will not put in his bag, or that the suburban goat will not devour. The other day, as I was going along the street, I was almost tempted to exclaim, in the quack-medicine man's improvement upon the Greek philosopher, "The Eureka is at last found out." Yes, I have, if not discovered, learned, how old hoop-skirts can be made useful. A few days ago I saw some chimney-sweeps come out of a house, and they had with them an affair which I supposed at first was like that figured last month on page 219. As I came nearer, I found the thing had a strangely familiar look—lo! it was my old enemy converted into something useful, though, it is true, humble. The chimney-sweeping brushes were made of bits of hoop-skirt bound together in the form shown in the sketch I send you. A moralist might draw a lesson from the fate of the hoop-skirt; built for the purposes of false pretenses—that of distorting the human figure out of every shape naturally belonging to it—it finds at last its only usefulness in cleaning soot out of a chimney. I rejoice over this discovery. Who will tell of another use for old hoop-skirts?

CITY READER.

What to Do with Bleeding Wounds.

BY DR. J. T. ROTHROCK.

(CONCLUDED.)

If we are called to do with hemorrhage below the groin, we have a ready way of stopping it by using the thumb or finger or the key just as we did behind the collar-bone, if the injury is so far up that we have no room to put on the handkerchief above the wound. On the figure, *c* points to the place of pressure. Draw in imagination a line, *d e*, from the most prominent anterior and upper portion of the hip-bones to the central bone of the body, somewhat lower and in front. Now, just about the middle of this line is the spot to make pressure. If you do not succeed at first, move your finger to the right or left along the same line until you do. So certainly may bleeding be arrested there, and by the simple procedure I have indicated, that surgeons often resort to it when amputating a thigh high up.

Stretching between the letters *f* and *g* is a muscle known as the *sartorius*, which is the Latin for the "tailor's muscle." It is so called because it serves to throw one leg over the other—the favorite position assumed by tailors when at work. The term, however, would be just as applicable to the Turk, and we might just as well christen it the muscle of the Mussulmen. Allow the name to stand for what it is worth, but remember that along the line of the inner side of this muscle, about the middle of the thigh, lies the main artery, and that a handkerchief placed around the leg with the knot, large and fine, placed over the muscle will stop the arterial current, and of course any hemorrhage of that character at a point below. The bands on the thigh with stick included show just how and where to apply the pressure; only, in both arm and thigh, let the stick be more to the outside of the limb than we could represent in the figure, and you will get the pressure "at a better advantage."

For a cut in the foot, with arterial spouting, you may perhaps control the bleeding by making two thick, firm pads, two inches wide and long, and placing one in the hollow left on either side between the ankle and the large tendon coming up from the heel, and over the whole tying a band tightly above the ankle. If that fails, you may be sure that the bandage around the thigh will not. Sometimes firm pressure with the fingers over the top of the foot will stop the jet of blood from a cut artery nearer the toes, but it must be remembered that here there is a free union of arteries, and that even if you do compress the injured trunk on top of the foot the blood may come spouting up from between the bones.

The special cases thus far given relate to arterial bleeding alone, except that from the jugular vein.

HOW TO COMPRESS ARTERIES.

Remember that bright blood coming in jets is from an artery, and that the dark-colored blood which flows in a steady stream is venous. In the latter class, *moderate pressure* above the injury would only keep up the trouble, because the arteries being as a rule deeper seated would allow the blood to be driven through them *from the heart*, and the constricting band above would be sufficient to close the cavity of the superficial veins, allowing thus no escape for the blood on its way to the heart except through the open end of the vein. This is most plainly seen in the operation of bleeding, where when the proper pressure is made above the point of the intended cut, the veins stand out prominently, like little cords stretched along under the skin. They are gorged. Strike the lancet into one of them, and see how the purple tide will rush out; tighten your bandage firmly as you can, and presently the blood will stop. You have not only compressed the vein between the cut and the heart, but you have compressed the artery between the heart and the veins; in other words, you have cut off the supply to the latter.

For venous bleeding, pressure over the cut, "*to repair the leak*," or the pressure of a soft cloth saturated with a solution of per-sulphate of iron, will often do you good service. So, too, will alum-water or even vinegar used in the same way be of service. Cobwebs have a reputation which has survived, no one can tell how many generations of doctors, for arresting flow of blood. Make a mass of them large enough to cover the wound, and thick enough to act as a pad, apply it to the cut, and it will soon entangle enough of the fibrin of the blood in its meshes to form a clot, through which further escape of blood is prevented.

Paleness of face, coldness of hands and feet, and a rapid pulse in one who has suffered from great loss of blood call loudly for stimulants, and in withholding them we may hasten a collapse from which no human aid can raise the patient. The intense thirst of wounded men on the battle-field is but an evidence of loss of blood, and the expression of the demand made by the system at large for more fluid to make good the deficiency.

Home Topics.

BY FAITH ROCHESTER.

HOUSEKEEPING AS A FINE ART.—Jean Ingelow sent a pleasant little letter from over the seas to the editors of "The Woman's Journal." She wrote to thank some unknown friend for sending her the "Journal," but she took occasion to tell American women that she wished they would study upon what seemed to her a very important problem—*how to make housework attractive to cultivated women.* She seemed to be under the impression that housework is nowhere so much despised as in America. T. W. Higginson, writing editorially in the "Journal" in response to "Miss Ingelow's Question," and writing as one who knows the culture and the customs of American society as well as any one, tried to correct Miss Ingelow's mistake about our women as compared with women abroad. He seems to think that New England abounds in excellent housekeepers, who rather pride themselves upon their capacity in that respect, instead of being ashamed of it. Mrs. Diaz portrayed this state of things in her late charming "Papers Found in the School-Master's Trunk."

In concluding his brief reply to Miss Ingelow, "T. W. H." said that with the rapid progress in the improvement of machinery, housekeeping might become a fine art in another generation; and he also suggested that one way of relief probably lay in the direction of association, some form of which, better than any yet known, doubtless awaited us in the future.

The author of "Woman in American Society" seems to have reached the same conclusions. Having said that "the prospect of deliverance by means of a supply of competent servants is but slight," and given her reasons for this belief, she says: "Deliverance must come, then, from a different source, if it come at all. Perhaps some feasible plan of co-operative housekeeping is to lift the burden from weary shoulders, and allow time for other work besides the mere elemental processes of cooking, washing, and sewing, which may be better done in combinations by professional hands. Perhaps machines for lessening labor will be improved and multiplied, so that what now requires two hours for its performance can be done in one. They have already accomplished much, and no one doubts that this is a mere tithe of what they are destined to achieve."

I recollect reading in the Christian Union Mrs. H.W. Beecher's account of her visit to the kitchen (and laundry, I believe) of the Parker House in Boston, where large capital makes kitchen labor easy and successful by the use of such perfect machinery as only large capital can employ. I be-

lieve she came to the conclusion that it was useless for our small households to expect to equal the perfection of cookery and cleansing done in such an establishment. It is clear that housekeeping can never become a fine art to many while it presses upon them as such a heavy and almost unbearable burden. The work of making and carrying on healthful and pleasant *homes* is second to no business, art, or profession. Its real beauty and use are hardly dreamed of yet, we are so swamped in the disorders that beset our common humanity. But the need of help in the household labor, and the growing home-sickness of everybody, demand and will bring some change for the better, and then housekeeping and home-making will go on with such joyful measure that housekeeping will not be drudgery but art.

MRS. BEECHER'S NEW BOOK.—Women will find an excellent companion in "Motherly Talks with Young Housekeepers," by Mrs. H. W. Beecher. These "talks" are upon a great variety of subjects, yet all properly within the "household" range. The "motherly" face itself, or a fine copy of it, appears in the front of the volume, and I join my thanks with those of thousands of women, I believe, for both book and picture.

It is one of the signs of the "good time coming" that so many good house and home books are being written. It is a very pleasant thing, I think, to have a gray-haired grandmother, like Mrs. Beecher, sit down and talk to us from out her large experience and observation about the cares and duties which surround and sometimes bewilder us, as they once did her. This book embraces eighty-seven brief articles on topics of home interest, and nearly five hundred recipes for cooking.

BEWARE OF CHILLINESS.—This may seem a strange suggestion for July, but it is not at all unseasonable. Many persons seem to suppose that they will keep warm without effort simply because it is the summer season, whether the weather is really warm or not. There are some cool rainy days and many cool evenings and mornings when a little fire adds greatly to the general comfort. It is also a wise sanitary precaution to take off the chill of the early mornings or cool evenings or rainy days by a small fire. Fevers, rheumatisms, and diseases of the bowels are often provoked by a slow, chilling process, when the weather is so moderate that no one thinks of building a fire or even of putting on more clothing. There are some excessively warm nights in July and August, but probably it is the case that on more than half of the evenings and mornings more clothing should be worn by children and adults than is needed between nine A.M. and six P.M. Light sacks and coats, for use at such times, should be in every one's wardrobe.

REST BEFORE EATING.—Call your men in to the dinner at least a quarter of an hour before you want them to sit down to the table. Then they can wash up and throw themselves full length on the plazza, or on boards in the shade (but not upon the ground), and get into some proper condition for digesting a hearty meal. They will relish their food better, it will "set" better, and they can work better all the afternoon in consequence of this rest, and they will not be half as likely to get sick right in the middle of harvest. Ten minutes of good rest before dinner is worth everything to a hard-working man. Everybody knows that a season of rest after dinner pays well, but it is not more important than the rest before eating if one is very weary. This rule is of the utmost importance to the "business man" or the person engaged in brain labor, and its violation is one of the chief causes of our national dyspepsia—this and the rapid eating that is customary. People of strong and unimpaired constitution (if any such can be found) may not *feel* how impossible it is for the body to carry on the business of digestion when greatly fatigued, or while it is being put to hard labor in some direction; but such is the case, and the health of our citizens is all the time being destroyed for lack of knowledge on this point. The stomach must have some vitality or nerve force to do its work with, and if the body has been using this vigorously, with the muscles or with the brain, a little time should be allowed for gathering up its energies for the task of digestion.

[The foregoing was unconsciously dictated me by Mr. Rochester—and now he goes on.] "A cup of coffee—I've felt it myself and seen it in others—the desire to taste it before beginning to eat, just to gather up strength for the rest of the meal. The plate of soup at dinner answers the same purpose. It is like the water you have to put in a pump in order to start it. The soup is something that a hungry but tired stomach can take without effort, and at the same time it gives rapid refreshment, and ability to take hold of something more substantial."

[I hope that all this is correct, but I "can not be responsible," and Mr. R. was talking for my edification, without expecting to be reported *verbatim*. But as he has been reading Dio Lewis's late book on Digestion with considerable satisfaction, and certainly with profit to his own health, I like to write down what he said to me when I told him the "topic" I had just written down and then yawned sleepily. I am "much obliged" to him, and I hope you are suited too.]

MORE ABOUT DRIED CORN.—Our Illinois friend is right. It does improve the corn very much to soak it a long time before cooking it. All the last winter we soaked ours over-night, and were fully satisfied that it is the best way. I did not attend to the drying of the corn last year. It was one of the self imposed tasks of my "visitor" during my absence. She dried it in three ways—scalding some of it before cutting it from the cob, and cutting off some without scalding until she dried it rapidly in the oven. I did not discover which of these ways was best. A third way was to cut the corn through the middle of the rows and scrape out all of the pulp upon plates, leaving the more solid portion of the corn behind. This was dried in the oven, and it was excellent. Grandpa, whose teeth are poor, especially delighted in this, and he means hereafter to raise plenty of sweet-corn to be dried in the same way.

TO COOK GREEN-CORN.—Many cooks boil their corn too long. If the corn will prove tender at all, it will be so after half an hour's boiling, and twenty minutes is usually sufficient. After it is done, it only loses in sweetness by longer boiling. Like all *fresh* vegetables, it should be put into boiling water to cook. Almost all people prefer to gnaw it directly from the cob, but it may be sliced off as soon as done and seasoned with cream and salt, or with a small piece of butter, salt, and pepper.

GREEN-CORN SOUP.—Cut the corn from the cob, and boil the cobs half an hour. Take out the cobs and put in the corn, and boil it half an hour. Add half as much sweet milk as you have of the corn soup. Season with salt and a little pepper, and one or two eggs if you like. Let all boil up together, thickening with a little flour stirred smooth in milk.

SUCCOTASH.—It is customary to use one-third as much of beans as of corn. Lima beans are usually preferred, but any kind of fresh beans may be used. The beans require a longer boiling than the corn. Lima beans should be boiled an hour. More of the corn flavor will be obtained if the cobs are boiled with the beans for about twenty minutes before putting in the corn sliced from them. Season when nearly done with milk, cream, or butter, as you prefer, with salt, and perhaps a little pepper.

How to Cook a Beefsteak.

BY MRS. F. H. R., CHEROKEE CO., IOWA.

Don't look aggrieved, old housekeepers—you who know how to do everything. It is not to you I offer my suggestions, but to the young, inexperienced housekeepers who get nervous whenever a steak is brought into the house, especially if there are guests expected at table. Some time since, a complete encyclopædia of useful knowledge in human form became an inmate of our family. One doesn't expect a man to know everything—above all, to be learned in all the niceties of cookery. Besides, women have an extreme prejudice against a masculine invader of those sacred precincts, her kitchen—that monster who is fond of lifting the covers from the steaming kettles on the stove, spluttering on industriously towards the dinner hour. She doesn't like to have her oven-doors opened and shut mysteriously, the bread rising in the tins critically examined, and her rolls of butter weighed in the balance of masculine criticism, to be found wanting without a lucid explanation of the whys and wherefores of the failure. Well, when this learned guest came among us, he proved so pleasant an exception to the above rule, that we consulted him as an oracle in many cases, and asked him one morning, "Would he not tell us or show us a better way to cook the steak for breakfast." He took the thin, long-handled frying-pan from its nail, and putting it on the stove heated it quite hot. In this he put the pieces of steak previously pounded, but to my surprise did not put a particle of butter in the frying-pan, and did not salt his steak. He allowed the steak to merely glaze over, and then turned it quickly to the other side—turning it several times in this manner until it was done. Four minutes were not employed on the operation, but I think I never ate a juicier piece of steak. It was when done laid on the platter previously warmed, and was buttered and salted and set a moment in the hot oven. Allowing the steak to heat but a moment on each side helped it to retain all its sweet juices, and putting on the salt the last moment after it was on the platter drew out its juices.

Mosquito Guards.

The rest of the laboring man is not always sweet, notwithstanding the proverb. One of the greatest pests of the farm-house in summer is the mosquito, especially in the vicinity of water. For those who have the means to buy fine woven wire in elegant mahogany frames just fitting the windows, there is an easy defence against these pests. But mosquito-netting, which is very cheap, will answer all the purpose of the more costly article, and one who can use a jack-knife and a hammer can make a frame to fit the raised window. If one has a plane, they can be made of fine strips, an inch square, and nicely painted. These will last a great many years. But in the absence of suitable tools common lath will answer a very good purpose. Cut off two strips to fit the width of the window. Cut two more about eighteen inches in length for the uprights. Nail these four laths at the corners, making a frame to fit nicely into the window, and cover the frame with the netting. You have a complete mosquito-guard, and can sleep with open windows the rest of the summer.

Lemon Pies.—By Mrs. F. H. R.—Those delicately frosted, rich confections are toothsome affairs—but oh! our poor stomachs! Here is a recipe (if one is going to patronize lemon pies at all) which is really very nice, cheaper, and more healthful. For one pie: One egg; one-half a lemon, cut in very thin slices or grated; enough corn-starch to make a cupful of starch, made with boiling hot water as if for starching, or more if your pie plates are very large. Beat the egg with enough sugar to sweeten the mixture to taste. Bake with an upper crust.

Watermelon Vinegar.—By Mrs. F. H. R.—Perhaps it is not generally known that a very fine white vinegar can be made from the juice of watermelons. We had a very great quantity of melons last season, and, after we had cut out their crimson cores for eating, scraped the shells, from which we gained a large amount of juice. This we carefully strained, and put into jugs with small glass bottles in their mouths. We set the jugs out into the sun, and in time had a fine-flavored, clear, strong, white vinegar. The vinegar at a certain stage will be very bitter, but, when perfected, loses this and acquires a true vinegar taste.

BOYS & GIRLS' COLUMNS.

The Menagerie Prizes.

I was afraid that the boys and girls had all forgotten about the menagerie, but now—I write this on the last day of May—every mail brings "Doctor" letters by the dozen, so we shall have a merry number of contributors. I have told you before that this part of the paper is printed about ten days earlier than the outside sheets; in consequence, the announcement of prizes can not be given here. You must look over in the front part of the paper for them. Aunt Sue gives her report of the puzzle prizes this month; this takes up considerable space, but will interest so many that they will not miss the usual variety in the Boys and Girls' pages. THE DOCTOR.

More Prizes for Puzzlers!

BY AUNT SUE.

The task given you for the last prize competition, in February (the verse transposition), was simply to exercise your patience and ingenuity; now I propose to make you better acquainted with geography, so offer six more prizes (books) for the greatest number of rivers and lakes found in the name of any one mountain. For instance, in Jungfrau (a mountain of the Swiss Alps) may be found:

Una and Jauru, rivers of Brazil.
Gran, a river in Hungary.
Jura, a river in Russia.
Gura, a river in Africa.
Graun, a lake in Austria.
And doubtless others.

You may select your own mountain (but it must not include the word "mount" or "mountain"). You must tell where the lakes and rivers are to be found (as above). *You must not construct a name which has no geographical existence, or the whole list will go for nothing.* You must send your letters on the subject to AUNT SUE, BOX 111, P. O., Brooklyn, N. Y., and not to THE DOCTOR; and the lists must be all in before the 20th of next September. I can not now give you the *modus operandi* of deciding upon the relative merits of lists sent, but should there be several of equal merit the award of prizes will be decided by lot. Now get out your maps, geographies, and gazetteers, and go to work.

The Prize Result of the Transposition Trial.

Well, after sorting and sifting, first discarding the incorrect, then the disconnected and senseless, and those with merely the words and not the letters transposed—I had about forty pretty good sentences left. Then I weeded them out somewhat after this order: First, those with names or nicknames evidently made up or spelled to suit the occasion. Secondly, the ungrammatical. Thirdly, those with abbreviated words. Fourthly, the tautological. Fifthly, the overstrained. Sixthly, those written in pencil. And, after using all possible care and impartiality, I have concluded to award the prizes to the authors of the first six sentences following:

1. "Mother-wit, let me not blunder
In the task I set me now;
Clear it is, I—silly—wonder
Can each earn his 'merit' now?
H. N. EVALINE."
(M. E. Lynch, Darien, Walworth Co., Wisconsin.)

2. "With violets strew the mead,
Winsome May, while here;
Linnet to linnet calls,
The Iris and Cuckoo are near.
Brent Inn. I. M."
(Miss A. Savinne, Elkdale, Chester Co., Pa.)

3. "I think the words here written in this sentence are all in Noah Webster's common dictionary.
WILLIE LEMUEL VAN TAME."
(J. E. Chadeayne, Box 65, P. O., Sing Sing, N. Y.)

4. "The monkey, horse, martin, ermine, swallow, nest, thistle, wine, violet, train, witch, bench, dirt, and mice are all nouns. E. J. E."
("Kitty Clover," West 14th st., New York.)

5. "A wayside Inn. Welcome retreat in summer. Listen in a rich meadow to the linnet's note vie with the robin's call. H. L. KERN."
(No address.)

6. "Cheer the miserable; walk in wisdom; then claim no merit, however wise. Listen to eternal truth, and sin not. NINIE CLAY."
(No address.)

I know that many of you would like to see some of the other transpositions sent in, so I append several which deserve praise, though they have a weak spot here and there:

1. "There let winter, nice in storm,
The nice walk and street adorn;
While at my sunnier home
Cannas vie with lilies' bloom."

2. "All hate men who, rich in sin, whose minds intent on the crime, will strive to lead better men in a way to seek clear ruin." L. S.

3. "In time men seek to win laurels which are worthless; are intent to save coin. Let them try in nobler aim and win. CHILDE." J. W.

4. "Behold the heaven eternal!
Worlds i' that realm unknown;
Each one in its silent circle
Time its way in its own.
E. R. MERIM."

5. "Transmit all those wicked Lehi Swauncie letters verbatim immediately on the new northern wire.
ANNIE NICHOLSON."

6. "This cot is nicer, sunnier, lovelier than that. Now Ellen, Isabel, and Mertie may make it home this cold winter. R. W. EWENN."

7. "How music charms the innocent;
How sweet in every kind;
While to an art all eminent
It soon will rear the mind.
E. BEALER." W. T.

8. "On a scant heath in November,
Where a linn twinkles. I lie;
A tinted moor lies seaward;
Mimi, list to the curlew cry. E. N. N."

9. "Summer weather, oh! how nice,
No more bitter sleet nor ice;
Little Winnie mends her vail,
And with Clinty takes a sail. N. N."

10. "Winter has its charm. I like summer more; then I will attend school and hear the little ones recite, 'an, boy, inn, new, view.'" M. M. V. A.

11. "Witty William Henry Smith smashed Catherine O'Connell's new Teutonic kite and neat silver thimble.
ENORA W. ORREN."

12. "Ida S. Blamell, come home with me! We have snow and ice in winter. Sternly the teacher rules. It is not in title nor in rank."

13. "Lill and Lilan were twin sisters; both have one kitten; they are real cute. Their own mother's name is Minnie C. McWinod."

14. "When I am older I mean to travel. Then I will see many other countries. I want to be in Shire, Mechlin, Trent, and Sleswick." (This would be excellent but for the indefinite "Shire.")

15. "In my travels I met a man who asked to escort me at the show held in Cincinnati, where I turn to see Ellen. WINNIE R. BRILL."

16. "All sensible merchants know that to live within one's income leads unto wealth; we admire it in rich men. IRENE TERRY."

17. "In miniature we see the man
In every mother's child;
One can not tell, I think, nor scan
What will be tame or wild.
T. SNEERS."

That is all I have room for, but we have more very good ones from Addie B., W. Turner, W. B., M. Blakelee, L. T., Alice T., L. S. F., Minnie A., W. J. B., Charlie T., S. S. D., C. Turner, Mary A. E., Katie T., L. C. A., and others. Those who *tried*, and got everything all wrong, have my love and sympathy. AUNT SUE.

Aunt Sue's Puzzle-Box.

BLANKS.

(Fill the following blanks with words pronounced alike but spelled differently.)

1. He —— that the —— was in the —— enclosure.
2. We —— up the —— to the shore to see a man —— by some fishermen.
3. While there, we could —— the ——.
4. He gave the boy a ——, and —— him to get some ——.
5. The —— was so severe that it might almost be called a —— of terror; we let the horse go where he would, the —— was useless.

E. M. WELLES AND V. S. PEET.

POSITIVES AND COMPARATIVES.

1. An article of food; a tool.
2. A brook; an ensign.
3. An animal; what vinegar is supposed to be.
4. A dance; a wooden trough.
5. A school exercise; a season.
6. A color; a spring cushion.

(*Examples.*—Cant; canter. Past; pastor.)

PI.

Na shirmain, tingeme athrone, adesk imh thaw adh cobeem fo a tumula finder. "Ahair, own, ym read onehy" sawredne eh, "Dapdy saw dendmecon ot eb audheg, tub devas shi file yb gindy ni spinor."

CROSS-WORD.

My first is in balsam but not in myrrh.
My next is in lambs-wool but not in fur.
My third is in snow but not in water.
My fourth is in father but not in daughter.
My fifth is in roan but not in white.
My sixth is in day but not in night.
My seventh is in gnat but not in flea.
My eighth is in branch but not in tree.
My ninth is in martin but not in teal.
My tenth is in salmon but not in eel.
My eleventh is in chart but not in map.
My twelfth is in blow but not in slap.
My whole is a city far in the West.
Now you can easily make out the rest.
WILLIE MASTERS.

PUZZLE.

(From a word of five letters get the smaller words which are to fill the following blanks.)

An —— who had been stealing some —— and —— was sleeping on the ground when he was stung on the —— by an —— which he had happened to —— with his foot.

NUMERICAL ENIGMA.

I am composed of 9 letters.
My 7, 5, 6, 9 one ought to do every day.
My 5, 6, 4, though an emblem of poverty, has a commercial value.
My 8, 3, 1 is an animal.
My 8, 2, 5 is a pronoun.
My whole is much used in a school-room.
KITTIE M. E.

GOOD ADVICE.

E A E A L C E B R R E E V O E
R W V N U H B E I D V R E N P
A A I D F E Y B A E E O E H O
C Y R D R E S U P S N H P O H

ALPHABETICAL ARITHMETIC.

O M R) A S D C T L (D T M A
R O E
C O T C
C O D O
C A T L
C E T L
C M M

TRANSPOSED PROVERB.

Never rent at the table.

ANSWERS TO PUZZLES IN THE MAY NUMBER.

CROSS-WORD.—Education.

CONCEALED FURNITURE.—1. Stove. 2. Cot. 3. Sofa. 4. Bed. 5. Bench. 6. Stool.

DOUBLE ACROSTIC.—

U- mcolcu -S
N-ew Marke-T
I- ow -A
T- ren -T
E- lb -E
D-es Moine-S

ANAGRAMS.—1. Hospitalities. 2. Geometrical. 3. Concatenation. 4. Parenthesis. 5. Estimable. 6. Imperialist. 7. Conglomeration. 8. Circumvention. 9. Regeneration. 10. Magisterial.

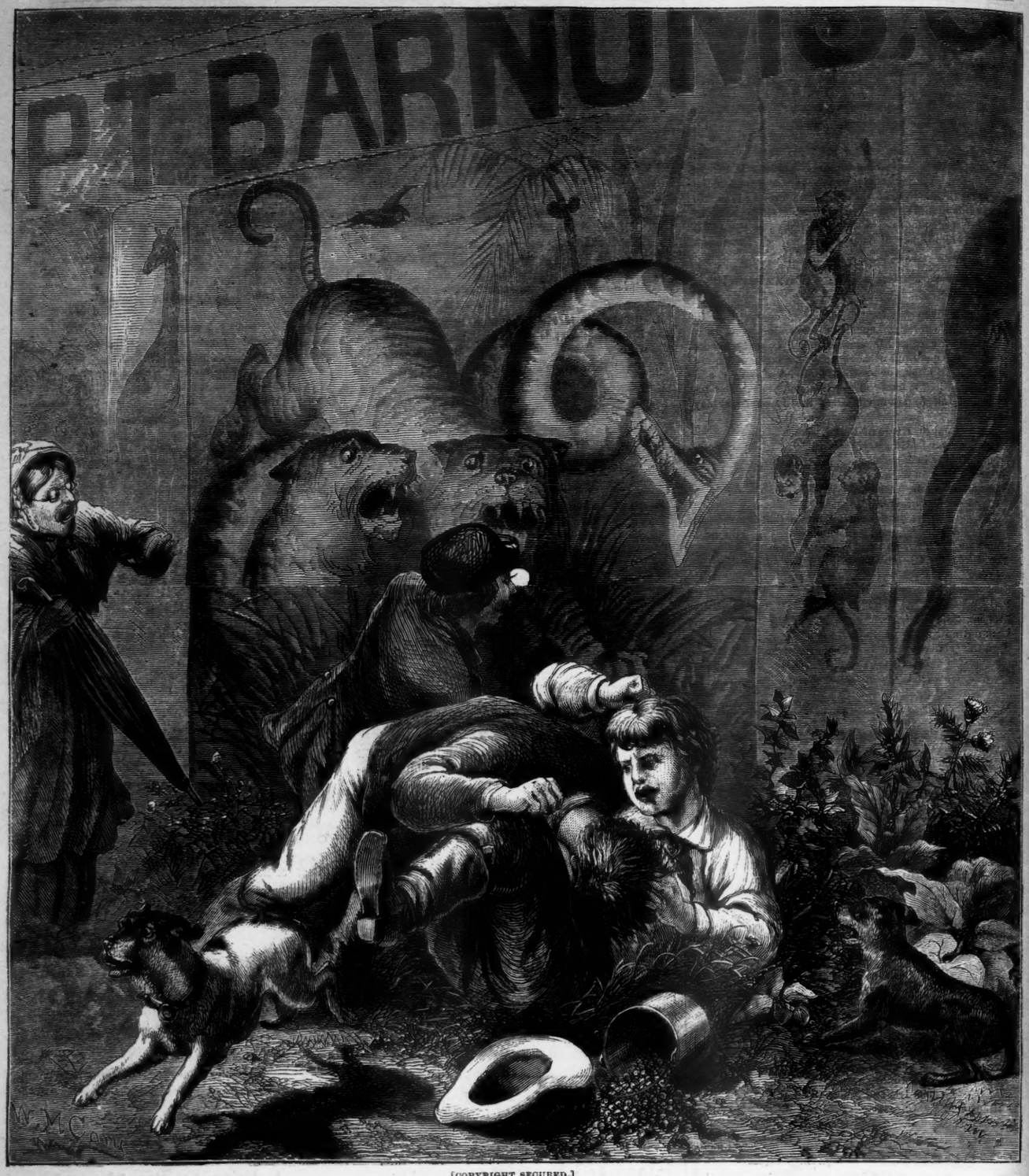
PATCHES, CUTTINGS, AND FRAGMENTS.—1. Mosquito (Moscow). 2. Elephant (Nat). 3. Monkey, donkey. 4. Centime (dime).

ELLIPTICAL SENTENCE.—Wright, write, rite, right.

NUMERICAL ENIGMAS.—1. All is not gold that glitters. 2. Mocking-bird.

A Peep at the Show.

About the time the leaves begin to appear the various shows start out from their winter quarters, "take the road," as the showmen call it, and go about the country exhibiting at places fixed upon a long time in advance. There are so many of these shows, that there is scarcely a place of importance, in the older States at least, that is not during the season visited by one or more of them. Agents of various kinds go a week or more ahead of the show, and select a ground for the tent, and engage food for the animals and board for the men. Then the bill-stickers cover the sides of barns, sheds, and fences with the showy bills, giving in wonderful colors enormous engravings of the wild beasts and other things to be seen in the show. Each one is, according to the bills, greater than any other show in the world. Then, on the day of the show, nearly every boy feels that the whole thing is



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A PEEP AT THE SHOW.—*Drawn and Engraved for the American Agriculturist.*

done for his special gratification. Work, school, or whatever is his regular occupation is put aside for that day, for he must see the show. At last the sound of music announces the arrival of the procession. The band in a wonderfully formed chariot; the long string of cages, carefully closed; the trained horses; the astonishingly little ponies; and last, and best of all, the elephant—what would a show be without an elephant and monkeys?—make up a sight dear to juvenile eyes. Boys see the show in various ways; many are taken by their parents; others, who have been preparing for the event long in advance, take out their slowly accumulated stock of change and march into the inclosure with the air that shows that they intend to enjoy what they have earned, and in one way or another every boy in the country round about sees something of the show. But there will be in almost every place a certain lot of boys to whom these quiet and honest ways of amusing themselves are not sufficiently exciting. You all know boys of this style, and when a melon-patch or an orchard has been robbed, or any other mischief has been committed, these boys at once come into the minds of the losers. It is just the same style of boys as those we saw crossing a stream on a birch-tree in last month's paper. If one of these young rascals can push by the doorkeeper in the crowd, or can slip under the edge of the canvas, he is sure to do so, as then he will have something to brag of for weeks to come. If the youngster of this pattern can not "hook-in" in any way, he contents himself with such glimpses as he can steal in other ways. If, as sometimes is the case, a high fence forms a part of the inclosure, he is sure to find a convenient knot-hole, and if he can not see the whole show in this way he is content with a part. If he can get a peep into a shed or stable where the elephant is kept when not on exhibition, or where the ponies and spotted horses are being fed, he is better satisfied than if he had seen the whole in a regular way. Of course, a favoring knot-hole can not long be enjoyed by one boy; where there is one boy of this style there is sure to be more, and what happens when the rest find out about it is so well shown by the artist in the picture given above as to need no description.

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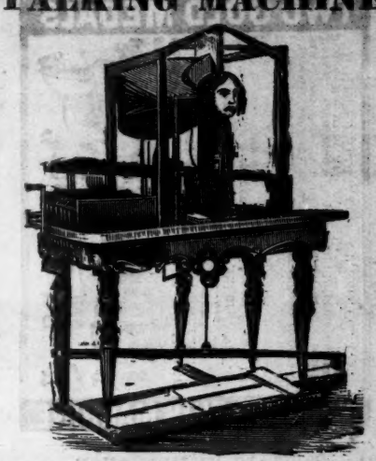
TALKING MACHINE.



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The Company now has loaned **$6,490,545.13** upon first-class real estate, security valued at **$23,488,131.00.** During the year 1872, the amount of **$2,300,891.13** was loaned at ten per cent interest, payable semi-annually. The basis of reserve held by the Company (actuaries' four per cent) is the highest standard in use in America. Not more than one Company in ten holds so high a reserve.

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The rate of mortality experienced by the *Northwestern* for the past ten years has been lower than that of any other leading company. In 1872, its interest receipts exceeded its death losses by nearly a quarter of a million dollars. Its working expenses are very small compared with those of other companies, when volume of new business is considered. For further information regarding the Company, write to Home Office, Milwaukee, Wis.

ASSETS, January, 1873, $13,500,000.00.

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"BEST EVER MADE."

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Threshing Machines

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HORSE-POWERS

Are not equaled by any in the market.

We make 4, 8, and 10 Horse-Lever Powers of 2 and 3 Horse-Tread Powers, and Threshers for steam or any kind of Horse-Powers; also, our Improved Combined Clover and Grain Thresher. Send for Circular.

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Important to Farmers and Threshermen.

We will send free on application a Descriptive Circular and Prices of our Improved Thresher—a small, compact machine, weighing, with lever power, etc., complete, less than 2,000 pounds, and WARRANTED, with four to six horses, to separate and clean thoroughly from 200 to 300 bushel wheat and a proportionate amount of oats per day, doing its work equal to the best of the large threshers. Prices and freight much less than the large machines.

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SELF-ACTING GATES. NICHOLSON'S PATENT. The best in the world. Address AMERICAN GATE CO., Cleveland, O.

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Cane Machinery,

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There are of these machines over 31,000 in use. They have taken the first premium at 117 State Fairs. Send for Descriptive Catalogue and Price-List.

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WINDMILLS.

Self-Regulating and Storm-Defying. The most reliable Windmill and cheapest power known. Large Mills for Grinding, Irrigation, Drainage, etc. Nearly 20 years' experience. Indorsed by Gov. John A. Dix, and many others. Reliable agents wanted everywhere. Send stamp for circular. Address A. P. BROWN (Inventor and Patentee of the "Continental," "Farmer's," etc.), 25 Waverley Place, New York.

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PERFECTLY Self-Regulating. The Best, Cheapest, most Durable and Popular Mill made. Manufactured under the immediate supervision of Inventor 18 years. Two million dollars' worth new in use. Send for Catalogue.

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We claim: It does the washing perfect without muscular aid; no rubbing on the wash-board; it will do your washing in half the time; and there is no wear of the fabric. To show our good faith, and the absolute success of this Washer, we will return the purchase-money in every instance if it does not give entire satisfaction. *Price* $8, $9, and $10. Salesroom 40 Cortlandt St., New York, where can be seen the unreserved indorsements of many who are using this Washer. Send for Circular or your order. Agents wanted.

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Rouen and Aylesbury Ducks.

Ten trios ROUEN DUCKS and twenty trios AYLESBURYS for sale at reasonable prices. Address

WILLIAM CROZIER,
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Pure,
Well-Bred,
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Thorough-bred Horses, Trotting Stock, Imported Alderneys, South Down Sheep, etc.

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GROUND BONE,
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Fresh Bone Superphosphate of Lime, or Dissolved Bone. Send for Circulars.

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The wheat will be put in strong, new bags, carefully directed, and delivered at express-office without extra charge. The wheat will be sent immediately after harvest.

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Payment to be made whenever called on by *check* payable to the order of the Union Trust Company.

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The Products of their Works Embrace Every Variety of Table Ware, such as

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In every article they manufacture, of whichever class, they maintain the same high standard in design, quality, and finish for which their Ware has been so long and so justly celebrated.

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The following varieties, the quality of which can not be excelled, will be mailed *post-paid* to any address in the Union upon receipt of price affixed: Early White Dutch, White Strap-leaf, Red-top Strap-leaf, Yellow Aberdeen, Long White or Cow-horn, Improved American Ruta-baga, Carter's Improved Swede, Skirving's Improved Swede, 10 cents per ounce, 25 cents 4 ounces, 75 cts. per pound. Large Yellow Globe, Long White French, Sweet German, 10 cents per ounce, 30 cts. 4 ounces, $1.00 per pound. Prices for larger quantities to dealers, either in bulk or packets for retailing, will be given upon application. Address

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Cabbage, Flat Dutch and Drumhead, 75c. 100, $5 M, $40 10,000.
" Red Dutch and Savoys, 75c. 100, $5 1,000, $40 10,000.
Cauliflower, Early Erfurt and Nonpariel, $1 100, $7 1,000.
By express, packed in the most careful manner.
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CABBAGE PLANTS.—Large stock of best varieties. By mail, 35c. per 100. By express, $2.50 per 1,000; $20 per 10,000. Very securely packed. TILLINGHAST BROS., Factoryville, Wyoming Co., Pa.

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FRUIT-GROWERS desiring to apply the SPEAR & WORRALL method of preserving fruits, etc., to preserve their surplus fruit for the winter market, can make special arrangements, and are invited to send for particulars.

This method provides for keeping all kinds of Fruits in quality superior to canned fruits—in large jars of whatever kind or size, and in wooden kegs and bbls.—so cheaply, as to admit of their selling at two-thirds (⅔) the price of canned fruits.

And for **BAKING** and **COOKING** purposes, with little sugar, and bbls. to keep the fruit in as directed, they may be sold as low, or even lower, than common dried fruits; and they will prove in every way superior to dried fruits for every purpose for which dried fruits are used.

For further information, see the *Am. Agriculturist* of June and July, 1872, or try the **PRESERVING-POWDER** as prepared for family use, or address

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Cheapest, Handsomest, Most Durable Cutlery known. Housekeepers find more trouble with loose and cracked handles in table cutlery than with anything else. The Handles of this style will stand boiling water, and never get loose. For full description see page 185 in *American Agriculturist* for May. Ask your dealer for them.

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NUTRINA,

Made from choice roasted Wheat. It will cure Dyspepsia and Constipation, and regulate Digestion. It will keep fresh and sweet any length of time, and cook in less time than ordinary cracked wheat. Sold by Grocers. Sample package sent free on receipt of 25 cents.

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Indicate the changes in the weather, and are pretty mantel ornaments. The little lady appears in fair and the man in stormy weather, and they never make mistakes. Sent prepaid to any address, safely packed, upon receipt of $2 (Two), by **ALVAN L. LOVEJOY,** Proprietor and Manufacturer, **239 Washington St., Boston.**

Special price to dealers.

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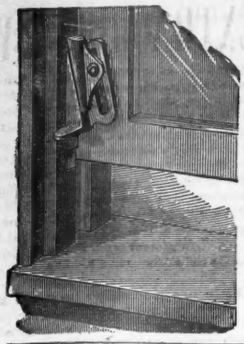

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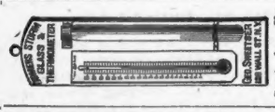

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"'Mischief Brewing' arrived yesterday. I am greatly obliged to you for it; we are all very much pleased with it; think that it is all that it has been represented."

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"I think your beautiful Chromo *very* pretty, and it shall have an honored place in mamma's drawing-room."

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"Your beautiful Chromo, 'Mischief Brewing,' arrived safely by mail yesterday. I think it must be admired whenever seen, it is so truly excellent."

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"Your Chromos are received, and we are exceedingly pleased with them. They are both beautiful."

"A few days ago I received the beautiful Chromo you sent me. We all admire it very much, and feel under many obligations for your kind donation."

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"Both Chromos received. I like them much. To furnish such inducements to subscribers I can not but think you are working altogether for glory—for profit there can be none."

"Your beautiful Chromo, 'Mischief Brewing,' arrived safely by mail. I think it must be admired wherever seen, it is so truly excellent."

"Your Chromos are received, and we are exceedingly well pleased. They are both beautiful, but we fancy the American picture. Please accept our thanks."

"The two Chromos, 'Mischief Brewing' and 'The Strawberry Girl,' were received in good order, and are really very pretty and well-finished pictures. They are far superior to the chromos issued by the ——, which I received at the same time."

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"Your Chromo of the boy and girl with Jack-o'-lantern (Mischief Brewing) received this day. It is a perfect beauty. My three little boys and one girl are delighted with it—the coloring so soft, the scene so perfect and natural. Accept my thanks for the Chromo and for your very valuable paper, that I have taken many years and shall continue to do so for years to come."

"The Chromo is this day received, and gives the completest satisfaction. There were three or four gentlemen in the bank when the picture was exhibited, and all pronounced it fine. It gives you two new subscribers."

"The Chromo of *Hearth and Home* has arrived, and gives complete satisfaction and delight to all. The position of the little one is as natural as life, while her face is full of beauty, innocence, and expression."

"Our beautiful Chromo, 'The Strawberry Girl,' came several days ago, and we should have acknowledged its receipt ere this, only for want of time. We and all of our friends are delighted with the picture, and the general expression is, 'How can they afford to give so fine a picture?' Receive our sincere thanks for the Chromo, and best wishes for your paper as well as your own personal future good."

"'Mischief Brewing' arrived on the 3d, and immediately commenced brewing mischief, in that no one could properly attend to their work for looking at the Chromo."

"The picture alone, in my opinion, is worth three times the subscription price of *Hearth and Home*, and the latter is a mine of useful and entertaining knowledge."

"The sweet little 'Strawberry Girl' has found her way into our home and hearts. No one could declare the berries 'just paint, arranged to deceive,' for the pretty flushed face tells us plainly that the little lassie has just picked the berries, and is now ready to see how they taste. So natural is it, that I found myself exclaiming, 'How do you do, dear?' before I could realize that she couldn't answer back."

"Your premium Chromo has just been received. Well pleased with it. Thanks."

"I received the two Chromos, and am highly pleased with them; they were beyond my expectations. I am profoundly obliged to you for them. I will try my best now to get as many subscribers as possible."

"It does seem wrong for me to add to your labor by even reading this note, and I at first thought I would not do it. But I felt so mean to receive two such gifts as the Chromos of *Hearth and Home* and *Agriculturist* and not so much as reply with a 'thank you.' I could not stand it any longer since seeing the delight of my subscribers over their Chromo for the *Agriculturist*. Please forgive me for the time it takes you to read this, and the thanks I send with theirs for the splendid presents. 'Truly a thing of beauty is a joy forever.'"

"The premium you give with *Hearth and Home*—viz., 'The Strawberry Girl'—is at hand. I can not but return my most sincere thanks. It is the pride of our household; it is a perfect beauty."

"Your premium Chromo of the 'Strawberry Girl' for *Hearth and Home* came to hand by mail all right. It is beautiful beyond our expectations, and is really up to and beyond your description of it. We thought some little exaggeration might be allowed, when so many Chromos were in the market, and you had so many competitors. But in this, as well as in your premium Chromo for *Agriculturist*, the one half has not been told. We admire both *hugely*, and thank you most heartily for them."

"I take the liberty of trespassing on your time to thank you for the beautiful Chromo which arrived yesterday. We have taken your excellent paper more than *thirty* years, and in every case have derived many times its subscription price in positive benefit. The picture I shall consider as a *gift* from you. Having spent the most of my youth on a farm, I can truly appreciate the spirit of the scene in every particular, and know that the sturdy and enterprising farmers of our country are but the matured mischief-makers of the picture. With many thanks, I am."

"I am bound to acknowledge reception of my beautiful Chromos. 'Mischief Brewing' came to hand several weeks since, 'Strawberry Girl the past week—both in good condition. I am delighted with them; the best present I have received in a life-time. Many thanks."

"Please accept my thanks for your beautiful Chromos, 'Strawberry Girl' and 'Mischief Brewing,' as premiums to the *Hearth and Home* and *American Agriculturist*. They are certainly very handsome."

"I received the Chromo, 'Mischief Brewing,' on the 8th inst. It has surpassed my expectations, being a gem of its kind."

"The beautiful Chromo, 'The Strawberry Girl,' arrived in good order, and pleases us all; even our nine-months-old baby crows with delight when he sees her sweet face."

"The two Chromos came to us in good condition. We think them very fine, and thank you for the pleasure we enjoy in looking at them."

"It is a lovely picture, and I thank you for it."

"The 'Strawberry Girl' arrived in excellent condition this afternoon. I am very much pleased with it, and thank you most heartily."

"We think the *Hearth and Home* Chromo is the prettiest one we have ever seen—*perfectly splendid*."

"The *Hearth and Home* Chromo is *very* fine, and the other very pretty and life-like."

"I have to thank you for the beautiful Chromo, received a few days since. It entirely exceeded my expectations."

"We are very much obliged for the Chromo, 'Mischief Brewing,' which came safely this afternoon."

"The Chromo of the *Agriculturist* has arrived, and we think it is very pretty."

"I have received the Chromo, the 'Little Strawberry Girl.' It is a perfect beauty."

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"The picture premiums of the *Hearth and Home* are splendid; we admire them very much indeed."

"We think the Chromo which came with the paper is very pretty, for which we return thanks."

"I am the grateful recipient of the two beautiful Chromos, and embrace the very first opportunity of tendering to you my heartfelt thanks for the same."

"Please accept our thanks for the Chromo, 'Mischief Brewing,' received last week. We think it very pretty. Also, —— wishes to thank you for the 'Strawberry Girl.'"

"The *Hearth and Home* Chromo has been received. Please accept a whole household's thanks. All are charmed, from 'the gude man' down to the smallest lad and lassie. We are only sorry we did not subscribe for the *American Agriculturist* with *Hearth and Home*, and thus have secured, at your liberal terms, another good paper and another nice picture."

"We received the pictures—the 'Strawberry Girl' and 'Mischief Brewing'—lately, and are delighted with them, and we wish to thank you for them. Not only are the pictures very beautiful and satisfactory, but all the family have become more interested in pictures of all kinds. We like both papers very much indeed."

"I received the *Hearth and Home* Chromo, and am more than pleased with it. As I am an old bach., and do my own work out-doors and in, the picture will be a great ornament to my old shanty. I have been a subscriber to the *Hearth and Home* since you took charge of it and the *Agriculturist* since 1860. They are all the papers I take. I would sooner live on short rations than do without them."

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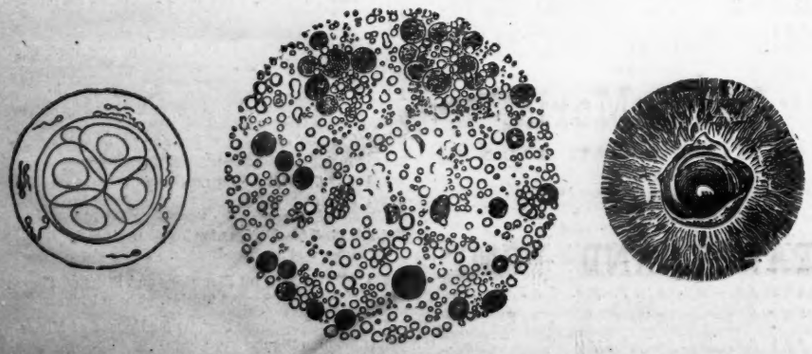

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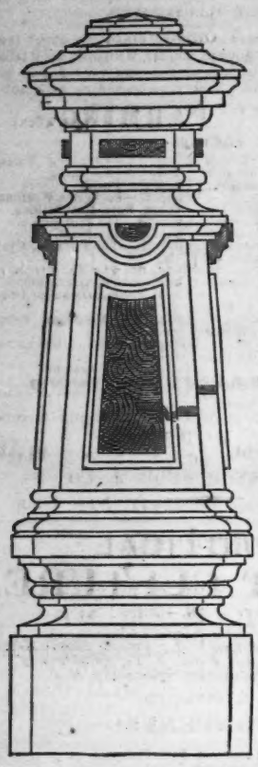

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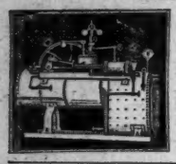

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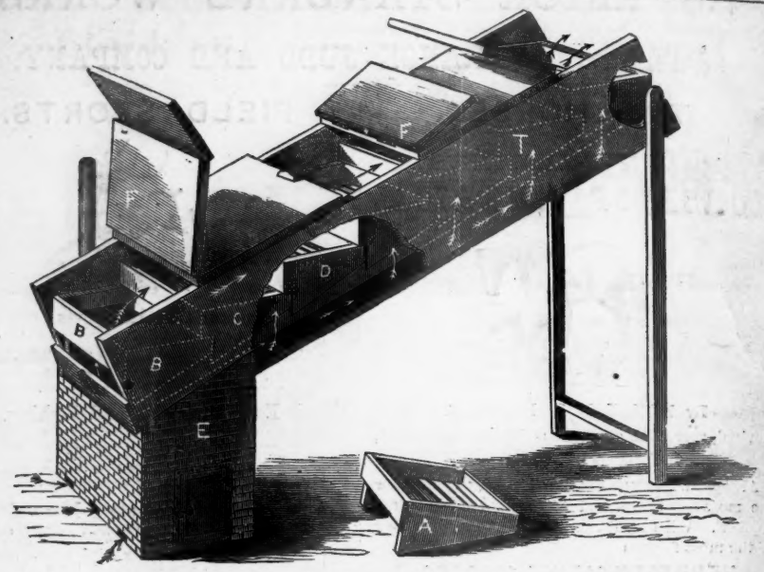

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